```
                E MONTAGNIER LUC/IN
L1           99 S E3
L2           65 S L1 AND (ANTIBOD?/CLM)
L3           10 S L2 AND (P12/CLM)
L4            5 S L2 AND (P18/CLM)
L5            3 S L4 NOT L3
L6           13 S L2 AND (P25/CLM)
L7            8 S L6 NOT (L3 OR L5)
                E LUCIW PAUL/IN
L8            9 S E3-E4
L9            9 S L8 AND (ANTIBOD?)
L10           5 S L9 AND (P12)
L11           1 S L9 AND P18
L12           0 S L11 NOT L10
L13           6 S L9 AND P25
L14           1 S L13 NOT L10
                E LEVY JAY A/IN
L15           9 S E3
L16           9 S L15 AND ANTIBOD?
L17           0 S L16 AND (P12)
L18           0 S L16 AND P18
L19           0 S L16 AND P25
                E GALLO ROBERT C/IN
L20          49 S E2 OR E3
L21          43 S L20 AND ANTIBOD?
L22           0 S L21 AND P12
L23           2 S L21 AND P18
L24           8 S L21 AND P25
L25           8 S L24 NOT L23

=> log off
ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:y
STN INTERNATIONAL LOGOFF AT 21:46:51 ON 01 MAR 2004
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 * * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

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  NEWS  3  SEP 09   CA/CAplus records now contain indexing from 1907 to the
                    present
  NEWS  4  DEC 08   INPADOC: Legal Status data reloaded
  NEWS  5  SEP 29   DISSABS now available on STN
  NEWS  6  OCT 10   PCTFULL: Two new display fields added
  NEWS  7  OCT 21   BIOSIS file reloaded and enhanced
  NEWS  8  OCT 28   BIOSIS file segment of TOXCENTER reloaded and enhanced
  NEWS  9  NOV 24   MSDS-CCOHS file reloaded
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  NEWS 11  DEC 08   IMS file names changed
  NEWS 12  DEC 09   Experimental property data collected by CAS now available
                    in REGISTRY
  NEWS 13  DEC 09   STN Entry Date available for display in REGISTRY and CA/CAplus
  NEWS 14  DEC 17   DGENE: Two new display fields added
  NEWS 15  DEC 18   BIOTECHNO no longer updated
  NEWS 16  DEC 19   CROPU no longer updated; subscriber discount no longer
                    available
  NEWS 17  DEC 22   Additional INPI reactions and pre-1907 documents added to CAS
                    databases
  NEWS 18  DEC 22   IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields
  NEWS 19  DEC 22   ABI-INFORM now available on STN
  NEWS 20  JAN 27   Source of Registration (SR) information in REGISTRY updated
                    and searchable
  NEWS 21  JAN 27   A new search aid, the Company Name Thesaurus, available in
                    CA/CAplus
  NEWS 22  FEB 05   German (DE) application and patent publication number format
                    changes

  NEWS EXPRESS  DECEMBER 28 CURRENT WINDOWS VERSION IS V7.00, CURRENT
                MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
                AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
  NEWS HOURS    STN Operating Hours Plus Help Desk Availability
  NEWS INTER    General Internet Information
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FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004

=> file uspatful
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
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FILE COVERS 1971 TO PATENT PUBLICATION DATE: 26 Feb 2004 (20040226/PD)
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FILE LAST UPDATED: 26 Feb 2004 (20040226/ED)
HIGHEST GRANTED PATENT NUMBER: US6698023
HIGHEST APPLICATION PUBLICATION NUMBER: US2004040063
CA INDEXING IS CURRENT THROUGH 26 Feb 2004 (20040226/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 26 Feb 2004 (20040226/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2003
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2003

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>>>  publications.  The publication number, patent kind code, and      <<<
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>>>  the earliest to the latest publication.                           <<<

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> e montagnier luc/in
E1            1     MONTAGNESE CATHERINE/IN
E2            1     MONTAGNI ALVIERO/IN
E3           99 --> MONTAGNIER LUC/IN
E4           12     MONTAGNINO JAMES/IN
E5           66     MONTAGNINO JAMES G/IN
E6            1     MONTAGNINO JIM/IN
E7            1     MONTAGNINO LUCIAN/IN
E8            3     MONTAGNO WILLIAM J/IN
E9            3     MONTAGNON BERNARD J/IN
E10           2     MONTAGNON BRUNO/IN
E11           1     MONTAGNON FRANCOISE/IN
E12           3     MONTAGNON JACQUES/IN

=> s e3
L1           99 "MONTAGNIER LUC"/IN

=> s l1 and (antibod?/clm)
         29436 ANTIBOD?/CLM
L2           65 L1 AND (ANTIBOD?/CLM)

=> s l2 and (p12/clm)
           102 P12/CLM
L3           10 L2 AND (P12/CLM)

=> d l3,cbib,ab,clm,1-10

L3   ANSWER 1 OF 10  USPATFULL on STN
2003:244249 HIV-2 antigen compositions.
    Montagnier, Luc, Le Plessis Robinson, FRANCE
    Chamaret, Solange, Paris, FRANCE
    Guetard, Denise, Paris, FRANCE
    Alizon, Marc, Paris, FRANCE
    Clavel, Francois, Paris, FRANCE
    Guyader, Mireille, Paris, FRANCE
```

Sonigo, Pierre, Paris, FRANCE
Brun-Vezinet, Francoise, Paris, FRANCE
Rey, Marianne, Paris, FRANCE
Rouzioux, Christine, Paris, FRANCE
Katlama, Christine, Paris, FRANCE
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)
US 2003170658 A1 20030911
APPLICATION: US 2002-180460 A1 20020627 (10)
PRIORITY: FR 1986-910 19860122
FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
DOCUMENT TYPE: Utility; APPLICATION.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a new class of retroviruses, designated by HIV-2, of which samples have been deposited to the ECACC under numbers 87.01.1001 and 87.01.1002 and to the NCIB under numbers 12.398 and 12.399.

It relates also to antigens capable to be obtained from this virus, particularly proteins p12, p16, p26 and gp140. These various antigens can be used for the diagnosis of the disease, especially by contacting these antigens with a serum of a patient submitted to the diagnosis.

It relates to immunogenic compositions containing more particularly the glycoprotein gp140. Finally it concerns nucleotidic sequences, which can be used especially as hybridization probes, derived from the RNA of HIV-2.
CLM What is claimed is:
1. HIV-2 retrovirus or variance of this virus, which retrovirus has infectious properties with respect to human T4 lymphocytes and the essential morphological and immunological properties of any of the retroviruses deposited at the CNCM under n.cndot. I-502, I-532, I-642 and I-643:

2. The purified retrovirus of claim 1 which possesses the following properties: the preferred target for the HIV-2 retrovirus consists of human Leu 3 cells (or T4 lymphocytes) and for permanent cell lines derived of said T4 lymphocytes; it is cytotoxic for the human T4 lymphocytes which it infects; it has a reverse transcriptase activity which requires the presence of Mg^{2+} ions and has a strong affinity for poly adenylate oligodeoxythymidylate (poly(A)-oligo(dT) 12-18); it has a density of approximately 1.16 in a sucrose gradient; it has a mean diameter of 140 nanometres and a core having mean diameter of 41 nanometres; it can be cultivated in permanent cell lines expressing the T4 protein; it is not infectious in T8 lymphocytes; the lysates of this virus contain p26 protein which does not crossreact immunologically with p24 protein of the HTLV-1 virus or of the HTLV-2; said lysates further contain p-16 protein which is not recognized immunologically by p19 protein of HTLV-1 or of HTLV-2 in radioimmunoprecipitation assays; said lysates further contain an envelope glycoprotein having a molecular weight of the order of 130,000-140,000 which does not crossreact immunologically with gp110 of HTLV-1 retrovirus; said lysates further contain a molecule which can be labelled by ^{35}S-cystein, having an apparent molecular weight of about 36,000; the genomic RNA of HIV-2 hybridizes neither with the genomic RNA, nor with the ENV gene, nor with the LTRs of HIV-1 under stringent conditions; the genomic RNA of HIV-2 hybridizes weakly under non-stringent conditions with nucleotide sequences of the CAG region of the HIV-1 genome.

3. The retrovirus of claim 2 whose lysates also contain a molecule having an apparent molecular weight of 42,000-45,000.

4. The retrovirus of any of claims 1 to 3, wherein the nucleotidic

sequence of its genomic RNA which comprises the R region and the U3 region also comprises a nucleotidic sequence which corresponds with the following nucleotide sequence:

GTGGAAGGCGAGACTGAAAGCAAGAGGAATACCATTTAGTTAAAGGACAG

GAACAGCTATACTTGGTCAGGGCAGGAAGTAACTAACAGAAACAGCTGAG

ACTGCAGGGACTTTCCAGAAGGGGCTGTAACCAAGGGAGGGACATGGGAG

GAGCTGGTGGGGAACGCCTCATATTCTCTGTATAATATACCCGCTGCTTG

CATTGTACTTCAGTCGCTCTGCGGAGAGGCTGGCAGATTGAGCCCTGGAG

GATCTCTCCAGCACTAGACGGATGAGCCTGGGTGCCCTGCTAGACTCTCA

CCAGCACTTGGCCGGTGCTGGCAGACGGCCCCACGCTTGCCTGCTTAAAA

ACCTTCCTTAATAAAGCTGCAGTAGAAGCA

5. The retrovirus of anyone of claims 1 to 4 whose genomic RNA also contains a GAG sequence which corresponds with the following nucleotide sequence:

GAGRODN
ATGGGCGCGAGAAACTCCGTCTTGAGAGGGAAAAAAGCAGATGAA

TTAGAAAGAATCAGGTTACGGCCCGGCGGAAAGAAAAAGTACAGG

CTAAAACATATTGTGTGGGCAGCGAATAAATTGGACAGATTCGGA
100

TTAGCAGAGAGCCTGTTGGAGTCAAAAGAGGGTTGTCAAAAAATT

CTTACAGTTTTAGATCCAATGGTACCGACAGGTTCAGAAAATTTA
200

AAAAGTCTTTTTAATACTGTCTGCGTCATTTGGTGCATACACGCA

GAAGAGAAAGTGAAAGATACTGAAGGAGCAAAACAAATAGTGCGG
300

AGACATCTAGTGGCAGAAACAGGAACTGCAGAGAAAATGCCAAGC

ACAAGTAGACCAACAGCACCATCTAGCGAGAAGGGAGGAAATTAC
400

CCAGTGCAACATGTAGGCGGCAACTACACCCATATACCGCTGAGT

CCCCGAACCCTAAATGCCTGGGTAAAATTAGTAGAGGAAAAAAAG

TTCGGGGCAGAAGTAGTGCCAGGATTTCAGGCACTCTCAGAAGGC
500

TGCACGCCCTATGATATCAACCAAATGCTTAATTGTGTGGGCGAC

CATCAAGCAGCCATGCAGATAATCAGGGAGATTATCAATGAGGAA
600

GCAGCAGAATGGGATGTGCAACATCCAATACCAGGCCCCTTACCA

GCGGGGCAGCTTAGAGAGCCAAGGGGATCTGACATAGCAGGGACA

ACAAGCACAGTAGAAGAACAGATCCAGTGGATGTTTAGGCCACAA

AATCCTGTACCAGTAGGAAACATCTATAGAAGATGGATCCAGATA

GGATTGCAGAAGTGTGTCAGGATGTACAACCCGACCAACATCCTA

GACATAAAACAGGGACCAAAGGAGCCGTTCCAAAGCTATGTAGAT

AGATTCTACAAAAGCTTGAGGGCAGAACAAACAGATCCAGCAGTG

AAGAATTGGATGACCCAAACACTGCTAGTACAAAATGCCAACCCA

GACTGTAAATTAGTGCTAAAAGGACTAGGGATGAACCCTACCTTA

GAAGAGATGCTGACCGCCTGTCAGGGGGTAGGTGGGCCAGGCCAG

AAAGCTAGATTAATGGCAGAGGCCCTGAAAGAGGTCATAGGACCT

GCCCCTATCCCATTCGCAGCAGCCCAGCAGAGAAAGGCATTTAAA

TGCTGGAACTGTGGAAAGGAAGGGCACTCGGCAAGACAATGCCGA

GCACCTAGAAGGCAGGGCTGCTGGAAGTGTGGTAAGCCAGGACAC

ATCATGACAAACTGCCCAGATAGACAGGCAGGTTTTTTAGGACTG

GGCCCTTGGGGAAAGAAGCCCCGCAACTTCCCCGTGGCCCAAGTT

CCGCAGGGGCTGACACCAACAGCACCCCCAGTGGATCCAGCAGTG

GATCTACTGGAGAAATATATGCAGCAAGGGAAAAGACAGAGAGAG

CAGAGAGAGAGACCATACAAGGAAGTGACAGAGGACTTACTGCAC

CTCGAGCAGGGGGAGACACCATACAGGGAGCCACCAACAGAGGAG

TTGCTGCACCTCAATTCTCTCTTTGGAAAAGACCAG

6. The retrovirus of anyone of claims 1 to 5 whose genomic RNA contains an ENV sequence which corresponds with the following nucleotide sequence:

ENVRN

```
ATGATGAATCAGCTGCTTATTGCCATTTTATTAGCTAGTGCTTGC
          .          .          .          .

TTAGTATATTGCACCCAATATGTAACTGTTTTCTATGGCGTACCC
     .          .          .          .          .

ACGTGGAAAAATGCAACCATTCCCCTCTTTTGTGCAACCAGAAAT
        100          .          .          .

AGGGATACTTGGGGAACCATACAGTGCTTGCCTGACAATGATGAT
     .          .          .          .          .

TATCAGGAAATAACTTTGAATGTAACAGAGGCTTTTGATGCATGG
          .        200          .          .

AATAATACAGTAACAGAACAAGCAATAGAAGATGTCTGGCATCTA
     .          .          .          .          .

TTCGAGACATCAATAAAACCATGTGTCAAACTAACACCTTTATGT
          .          .        300          .

GTAGCAATGAAATGCAGCAGCACAGAGAGCAGCACAGGGAACAAC
     .          .          .          .          .

ACAACCTCAAAGAGCACAAGCACAACCACAACCACACCCACAGAC
          .          .          .        400

CAGGAGCAAGAGATAAGTGAGGATACTCCATGCGCACGCGCAGAC
     .          .          .          .          .

AACTGCTCAGGATTGGGAGAGGAAGAAACGATCAATTGCCAGTTC
          .          .          .          .

AATATGACAGGATTAGAAAGAGATAAGAAAAAACAGTATAATGAA
  500          .          .          .          .

ACATGGTACTCAAAAGATGTGGTTTGTGAGACAAATAATAGCACA
          .          .          .          .

AATCAGACCCAGTGTTACATGAACCATTGCAACACATCAGTCATC
     .        600          .          .          .

ACAGAATCATGTGACAAGCACTATTGGGATGCTATAAGGTTTAGA
          .          .          .          .

TACTGTGCACCACCGGGTTATGCCCTATTAAGATGTAATGATACC
     .          .        700          .          .

AATTATTCAGGCTTTGCACCCAACTGTTCTAAAGTAGTAGCTTCT
          .          .          .          .

ACATGCACCAGGATGATGGAAACGCAAACTTCCACATGGTTTGGC
     .          .          .        800          .

TTTAATGGCACTAGAGCAGAGAATAGAACATATATCTATTGGCAT
          .          .          .          .

GGCAGAGATAATAGAACTATCATCAGCTTAAACAAATATTATAAT
     .          .          .          .        900

CTCAGTTTGCATTGTAAGAGGCCAGGGAATAAGACAGTGAAACAA
          .          .          .          .

ATAATGCTTATGTCAGGACATGTGTTTCACTCCCACTACCAGCCG
```

```
     .         .         .         .         .

ATCAATAAAAGACCCAGACAAGCATGGTGCTGGTTCAAAGGCAAA
      1000         .         .         .

TGGAAAGACGCCATGCAGGAGGTGAAGACCCTTGCAAAACATCCC
     .         .         .         .         .

AGGTATAGAGGAACCAATGACACAAGGAATATTAGCTTTGCAGCG
         .      1100         .         .

CCAGGAAAAGGCTCAGACCCAGAAGTAGCATACATGTGGACTAAC
     .         .         .         .         .

TGCAGAGGAGAGTTTCTCTACTGCAACATGACTTGGTTCCTCAAT
         .         .      1200         .

TGGATAGAGAATAAGACACACCGCAATTATGCACCGTGCCATATA
     .         .         .         .         .

AAGCAAATAATTAACACATGGCATAAGGTAGGGAGAAATGTATAT
         .         .         .      1300

TTGCCTCCCAGGGAAGGGGAGCTGTCCTGCAACTCAACAGTAACC
     .         .         .         .         .

AGCATAATTGCTAACATTGACTGGCAAAACAATAATCAGACAAAC
         .         .         .         .

ATTACCTTTAGTGCAGAGGTGGCAGAACTATACAGATTGGAGTTG
 1400         .         .         .         .

GGAGATTATAAATTGGTAGAAATAACACCAATTGGCTTCGCACCT
         .         .         .         .

ACAAAAGAAAAAAGATACTCCTCTGCTCACGGGAGACATACAAGA
     .      1500         .         .         .

GGTGTGTTCGTGCTAGGGTTCTTGGGTTTTCTCGCAACAGCAGGT
         .         .         .         .

TCTGCAATGGGCGCTCGAGCGTCCCTGACCGTGTCGGCTCAGTCC
     .         .      1600         .         .

CGGACTTTACTGGCCGGGATAGTGCAGCAACAGCAACAGCTGTTG
         .         .         .         .

GACGTGGTCAAGAGACAACAAGAACTGTTGCGACTGACCGTCTGG
     .         .         .      1700         .

GGAACGAAAAACCTCCAGGCAAGAGTCACTGCTATAGAGAAGTAC
         .         .         .         .

CTACAGGACCAGGCGCGGCTAAATTCATGGGGATGTGCGTTTAGA
     .         .         .         .      1800

CAAGTCTGCCACACTACTGTACCATGGGTTAATGATTCCTTAGCA
         .         .         .         .

CCTGACTGGGACAATATGACGTGGCAGGAATGGGAAAAACAAGTC
     .         .         .         .         .

CGCTACCTGGAGGCAAATATCAGTAAAAGTTTAGAACAGGCACAA
      1900         .         .         .

ATTCAGCAAGAGAAAAATATGTATGAACTACAAAAATTAAATAGC
```

```
     .         .         .         .         .

TGGGATATTTTTGGCAATTGGTTTGACTTAACCTCCTGGGTCAAG
          .       2000          .         .

TATATTCAATATGGAGTGCTTATAATAGTAGCAGTAATAGCTTTA
     .         .         .         .         .

AGAATAGTGATATATGTAGTACAAATGTTAAGTAGGCTTAGAAAG
          .         .       2100          .

GGCTATAGGCCTGTTTTCTCTTCCCCCCCCGGTTATATCCAACAG

ATCCATATCCACAAGGACCGGGGACAGCCAGCCAACGAAGAAACA
          .         .         .       2200

GAAGAAGACGGTGGAAGCAACGGTGGAGACAGATACTGGCCCTGG
     .         .         .         .         .

GCGATAGCATATATACATTTCCTGATCCGCCAGCTGATTCGCCTC
          .         .         .         .

TTGACCAGACTATACAGCATCTGCAGGGACTTACTATCCAGGAGC
 2300         .         .         .         .

TTCCTGACCCTCCAACTCATCTACCAGAATCTCAGAGACTGGCTG
          .         .         .         .

AGACTTAGAACAGCCTTCTTGCAATATGGGTGCGAGTGGATCCAA
     .       2400          .         .         .

GAAGCATTCCAGGCCGCCGCGAGGGCTACAAGAGAGACTCTTGCG
          .         .         .         .

GGCGCGTGCAGGGGCTTGTGGAGGGTATTGGAACGAATCGGGAGG
     .         .       2500          .         .

GGAATACTCGCGGTTCCAAGAAGGATCAGACAGGGAGCAGAAATC
          .         .         .         .

GCCCTCCTGTGAGGGACGGCAGTATCAGCAGGGAGACTTTATGAA
     .         .         .       2600          .

TACTCCATGGAAGGACCCAGCAGCAGAAAGGGAGAAAAATTTGTA
          .         .         .         .

CAGGCAACAAAATATGGA
     .         .
```

7. The retrovirus of anyone of claims 1 to 6 whose RNA virtually hybridizes neither with the ENV gene and the LTR close to it, particularly with the nucleotide sequence 5290-9130 of HIV-1, nor with the sequences of the POL region of the HIV-1 genome, particularly with the nucleotide sequence 2170-2240 of HIV-1.

8. A composition comprising at least one antigen, particularly a protein or glycoprotein of HIV-2 virus according to anyone of claims 1 to 7.

9. The composition of claim 8 which consists of total extract or lysate of said retrovirus.

10. The composition of claim 8 wherein said antigen consists of at least one of the internal core proteins of said virus, particularly **p12**, p16 and p26, which have apparent molecular weight of the order of 12,000, 16,000 and 26,000.

11. The composition of claim 8, characterized in that it contains a gp140 glycoprotein having an apparent molecular weight of about 130,000-140,000.

12. An antigen which provides a single bound in electrophoresis on a polyacrylamid gel which comprises, in common with one of the purified antigens of HIV-2 retrovirus, an epitope that is recognized by the serum of a carrier of **antibody** against HIV-2.

13. A purified antigen having the immunological characteristics of one of the following proteins or glycoproteins of HIV-2: **p12**, p16, p26, p36, p42 and gp140.

14. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-**p12 antibodies**:

```
                                  ArgLysAlaPheLys
                                      .         .

    CysTrpAsnCysGlyLysGluGlyHisSerAlaArgGlnCysArg
             .         .      1200         .

    AlaProArgArgGlnGlyCysTrpLysCysGlyLysProGlyHis
        .         .         .         .         .

    IleMetThrAsnCysProAspArgGlnAlaGlyPheLeuGlyLeu
             .         .         .      1300

    GlyProTrpGlyLysLysProArgAsnPheProValAlaGlnVal
        .         .         .         .         .

    ProGlnGlyLeuThrProThrAlaProProValAspProAlaVal
             .         .         .         .

    AspLeuLeuGluLysTyrMetGlnGlnGlyLysArgGlnArgGlu
     1400         .         .         .         .

    GlnArgGluArgProTyrLysGluValThrGluAspLeuLeuHis
             .         .         .         .

    LeuGluGlnGlyGluThrProTyrArgGluProProThrGluAsp
        .      1500         .         .         .

    LeuLeuHisLeuAsnSerLeuPheGlyLysAspGln
             .         .         .
```

15. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-p16 **antibodies**:

```
    MetGlyAlaArgAsnSerValLeuArgGlyLysLysAlaAspGlu
             .         .         .         .

    LeuGluArgIleArgLeuArgProGlyGlyLysLysLysTyrArg
        .         .         .         .         .

    LeuLysHisIleValTrpAlaAlaAsnLysLeuAspArgPheGly
           100         .         .         .

    LeuAlaGluSerLeuLeuGluSerLysGluGlyCysGlnLysIle
        .         .         .         .         .

    LeuThrValLeuAspProMetValProThrGlySerGluAsnLeu
             .       200         .         .

    LysSerLeuPheAsnThrValCysValIleTrpCysIleHisAla
        .         .         .         .         .
```

GluGluLysValLysAspThrGluGlyAlaLysGlnIleValArg
. . 300 .

ArgHisLeuValAlaGluThrGlyThrAlaGluLysMetProSer
. . . . .

ThrSerArgProThrAlaProSerSerGluLysGlyGlyAsnTyr
. . . 400

16. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-p26 **antibodies**:

ProValGlnHisValGlyGlyAsnTyrThrHisIleProLeuSer
. . . . .

ProArgThrLeuAsnAlaTrpValLysLeuValGluGluLysLys
. . . .

PheGlyAlaGluValValProGlyPheGlnAlaLeuSerGluGly
500 . . . .

CysThrProTyrAspIleAsnGlnMetLeuAsnCysValGlyAsp
. . . .

HisGlnAlaAlaMetGlnIleIleArgGluIleIleAsnGluGlu
. 600 . . .

AlaAlaGluTrpAspValGlnHisProIleProGlyProLeuPro
. . . .

AlaGlyGlnLeuArgGluProArgGlySerAspIleAlaGlyThr
. . 700 . .

ThrSerThrValGluGluGlnIleGlnTrpMetPheArgProGln

AsnProValProValGlyAsnIleTyrArgArgTrpIleGlnIle
. . . 800 .

GlyLeuGlnLysCysValArgMetTyrAsnProThrAsnIleLeu
. . . .

AspIleLysGlnGlyProLysGluProPheGlnSerTyrValAsp
. . . . 900

ArgPheTyrLysSerLeuArgAlaGluGlnThrAspProAlaVal
. . . .

LysAsnTrpMetThrGlnThrLeuLeuValGlnAsnAlaAsnPro
. . . . .

AspCysLysLeuValLeuLysGlyLeuGlyMetAsnProThrLeu
1000 . . .

GluGluMetLeuThrAlaCysGlnGlyValGlyGlyProGlyGln
. . . . .

LysAlaArgLeuMetAlaGluAlaLeuLysGluValIleGlyPro
. 1100 . .

AlaProIleProPheAlaAlaAlaGlnGln

17. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-gp140 **antibodies**:

ENVRN

```
MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys
         .         .         .         .

LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro
    .         .         .         .         .

ThrTrpLysAsnAlaThrIleProLeuPheCysAlaThrArgAsn
       100         .         .         .

ArgAspThrTrpGlyThrIleGlnCysLeuProAspAsnAspAsp
    .         .         .         .         .

TyrGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp
         .       200         .         .

AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu
    .         .         .         .         .

PheGluThrSerIleLysProCysValLysLeuThrProLeuCys
         .         .       300         .

ValAlaMetLysCysSerSerThrGluSerSerThrGlyAsnAsn
    .         .         .         .         .

ThrThrSerLysSerThrSerThrThrThrThrThrProThrAsp
         .         .         .       400

GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsp
    .         .         .         .         .

AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe
         .         .         .         .

AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu
  500         .         .         .         .

ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr
         .         .         .         .

AsnGlnThrGlnCysTyrMetAsnHisCysAsnThrSerValIle
    .       600         .         .         .

ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg
         .         .         .         .

TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr
    .         .       700         .         .

AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer
         .         .         .         .

ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly
    .         .         .       800         .

PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis
         .         .         .         .

GlyArgAspAsnArgThrIleIleSerLeuAsnLysTyrTyrAsn
    .         .         .         .       900

LeuSerLeuHisCysLysArgProGlyAsnLysThrValLysGln
         .         .         .         .

IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro
    .         .         .         .         .
```

```
IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys
      1000          .          .          .

TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro
     .          .          .          .          .

ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla
          .      1100          .          .

ProGlyLysGlySerAspProGluValAlaTyrMetTrpThrAsn
     .          .          .          .          .

CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn
          .          .      1200          .

TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle
     .          .          .          .          .

LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr
          .          .          .      1300

LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr
     .          .          .          .          .

SerIleIleAlaAsnIleAspTrpGlnAsnAsnAsnGlnThrAsn
          .          .          .          .

IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu
 1400          .          .          .          .

GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro

ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg
     .      1500          .          .          .

GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly
          .          .          .          .

SerAlaMetGlyAlaArgAlaSerLeuThrValSerAlaGlnSer
     .          .      1600          .          .

ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu
          .          .          .          .

AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp
     .          .          .      1700          .

GlyThrLysAsnLeuGlnAlaArgValThrAlaIleGluLysTyr
                    .          .          .

LeuGlnAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg
     .          .          .          .      1800

GlnValCysHisThrThrValProTrpValAsnAspSerLeuAla
          .          .          .          .

ProAspTrpAspAsnMetThrTrpGlnGluTrpGluLysGlnVal
     .          .          .          .          .

ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGlnAlaGln
      1900          .          .          .

IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer
     .          .          .          .          .

TrpAspIlePheGlyAsnTrpPheAspLeuThrSerTrpValLys
```

```
          .      2000          .          .

TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu
     .          .          .          .          .

ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys
          .          .      2100          .

GlyTyrArgProValPheSerSerProProGlyTyrIleGlnGln

IleHisIleHisLysAspArgGlyGlnProAlaAsnGluGluThr
          .          .          .      2200

GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp
     .          .          .          .          .

ProIleAlaTyrIleHisPheLeuIleArgGlnLeuIleArgLeu
          .          .          .          .

LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer
 2300          .          .          .          .

PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu
          .          .          .          .

ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGluTrpIleGln
     .      2400          .          .          .

GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla
          .          .          .          .

GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleGlyArg
     .          .      2500          .          .

GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGluIle
          .          .          .          .

AlaLeuLeu***GlyThrAlaValSerAlaGlyArgLeuTyrGlu
     .          .          .      2600          .

TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal
          .          .          .          .

GlnAlaThrLysTyrGly
     .          .
```

18. A method for the in vitro detection of the presence of **antibodies** against anti-HIV-2 in a biological liquid, such as a serum, more particularly for the in vitro diagnosis of a potential or existing LAS or AIDS caused by HIV-2 type retrovirus, which comprises contacting a serum or other biological medium from the person to be diagnosed with a composition according to anyone of claims 8 to 11 or with an antigen according to anyone of claims 12 to 17, detecting the immunological conjuguate possibly formed between said anti-HIV-2-**antibodies** and the antigen or antigens used.

19. The method of claim 18 which comprises achieving the detection of said immunological conjuguate by reacting said immunological conjuguate possibly formed with a labelled reagent formed either by human anti-immunoglobulin-**antibodies** or of a bacterial A protein, and by detecting the complexe formed between the reagent and said immunological conjuguate.

20. Kit for the detection of anti-HIV-2-**antibodies** in a biological fluid, particularly of a person possibly carrying such **antibodies**, which comprises: a composition such as defined in anyone of claims 8 to

11 or an antigen such as defined in any of claims 12 to 17; and means for detecting the immunological complexe resulting from the immunological reaction between the antigen and said biological fluid.

21. The kit of claim 21, whose means for detecting the immunological complexe formed comprises human anti-immunoglobulins or a protein A and a means for detecting the complexe formed between the anti-HIV-2 **antibodies** contained in the detected immunological conjuguate.

22. Immunogenic compositions containing an envelope glycoprotein of HIV-2 retrovirus, such as gp140 of said retrovirus, or part of said glycoprotein, in association with a pharmaceutically acceptable vehicle appropriate for the constitution of vaccines effective against HIV-2.

23. The composition of claim 22 which contains at least part of an immunogenic glycoprotein comprising the proteic backbone having the following sequence:

```
ENVRN
MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys
          .         .         .         .

LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro
    .         .         .         .         .

ThrTrpLysAsnAlaThrIleProLeuPheCysAlaThrArgAsn
       100         .         .         .

ArgAspThrTrpGlyThrIleGlnCysLeuProAspAsnAspAsp
    .         .         .         .         .

TyrGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp
          .       200         .         .

AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu
    .         .         .         .         .

PheGluThrSerIleLysProCysValLysLeuThrProLeuCys
          .         .       300         .

ValAlaMetLysCysSerSerThrGluSerSerThrGlyAsnAsn
    .         .         .         .         .

ThrThrSerLysSerThrSerThrThrThrThrThrProThrAsp
          .         .         .       400

GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsp
    .         .         .         .         .

AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe
          .         .         .         .

AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu
  500         .         .         .         .

ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr
          .         .         .         .

AsnGlnThrGlnCysTyrMetAsnHisCysAsnThrSerValIle
    .       600         .         .         .

ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg
          .         .         .         .

TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr
    .         .       700         .         .
```

```
AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer
         .         .         .         .

ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly
    .         .         .       800         .

PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis
         .         .         .         .

GlyArgAspAsnArgThrIleIleSerLeuAsnLysTyrTyrAsn
    .         .         .         .       900

LeuSerLeuHisCysLysArgProGlyAsnLysThrValLysGln
         .         .         .         .

IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro
    .         .         .         .         .

IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys
      1000        .         .         .

TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro
    .         .         .         .         .

ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla
         .      1100         .         .

ProGlyLysGlySerAspProGluValAlaTyrMetTrpThrAsn
    .         .         .         .         .

CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn
         .         .      1200         .

TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle
    .         .         .         .         .

LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr
         .         .         .      1300

LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr
    .         .         .         .         .

SerIleIleAlaAsnIleAspTrpGlnAsnAsnAsnGlnThrAsn
         .         .         .         .

IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu
 1400        .         .         .         .

GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro

ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg
    .      1500         .         .         .

GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly
         .         .         .         .

SerAlaMetGlyAlaArgAlaSerLeuThrValSerAlaGlnSer
    .         .      1600         .         .

ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu
         .         .         .         .

AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp
    .         .         .      1700         .
```

GlyThrLysAsnLeuGlnAlaArgValThrAlaIleGluLysTyr

LeuGlnAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg
1800

GlnValCysHisThrThrValProTrpValAsnAspSerLeuAla

ProAspTrpAspAsnMetThrTrpGlnGluTrpGluLysGlnVal

ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGlnAlaGln
1900

IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer

TrpAspIlePheGlyAsnTrpPheAspLeuThrSerTrpValLys
2000

TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu

ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys
2100

GlyTyrArgProValPheSerSerProProGlyTyrIleGlnGln

IleHisIleHisLysAspArgGlyGlnProAlaAsnGluGluThr
2200

GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp

ProIleAlaTyrIleHisPheLeuIleArgGlnLeuIleArgLeu

LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer
2300

PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu

ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGluTrpIleGln
2400

GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla

GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleGlyArg
2500

GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGluIle

AlaLeuLeu***GlyThrAlaValSerAlaGlyArgLeuTyrGlu
2600

TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal

GlnAlaThrLysTyrGly

24. The immunogenic composition of claim 22 or of claim 23 which is

dosed in antigen in order to enable the administration of a dosage-unit of 10 to 500, particularly from 50 to 100 µg/kg of bodyweight.

25. Monoclonal **antibody** characterized by its ability to specifically recognize one of the antigens according to anyone of claims 14 to 17.

26. The secreting hybridomas of the monoclonal **antibody** of claim 25.

27. Nucleic acids, optionally labelled, derived of part at least of RNA of HIV-2 virus or of one of its variance.

28. The nucleic acid of claim 27, which contains at least part of the cDNA which corresponds with the entire genomic RNA of HIV-2 retrovirus.

29. The nucleic acid of claim 27, which contains the nucleotide sequence:

GTGGAAGGCGAGACTGAAAGCAAGAGGAATACCATTTAGTTAAAGGACAG

GAACAGCTATACTTGGTCAGGGCAGGAAGTAACTAACAGAAACAGCTGAG

ACTGCAGGGACTTTCCAGAAGGGGCTGTAACCAAGGGAGGGACATGGGAG

GAGCTGGTGGGGAACGCCTCATATTCTCTGTATAATATACCCGCTGCTTG

CATTGTACTTCAGTCGCTCTGCGGAGAGGCTGGCAGATTGAGCCCTGGAG

GATCTCTCCAGCACTAGACGGATGAGCCTGGGTGCCCTGCTAGACTCTCA

CCAGCACTTGGCCGGTGCTGGCAGACGGCCCCACGCTTGCCTGCTTAAAA

ACCTTCCTTAATAAAGCTGCAGTAGAAGCA

30. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

GAGRODN
MetGlyAlaArgAsnSerValLeuArgGlyLysLysAlaAspGlu

.multidot. .multidot. .multidot.
.multidot.
LeuGluArgIleArgLeuArgProGlyGlyLysLysLysTyrArg

.multidot. .multidot. .multidot.
.multidot. .multidot.
LeuLysHisIleValTrpAlaAlaAsnLysLeuAspArgPheGly

100 .multidot. .multidot. .multidot.
LeuAlaGluSerLeuLeuGluSerLysGluGlyCysGlnLysIle

.multidot. .multidot. .multidot.
.multidot. .multidot.
LeuThrValLeuAspProMetValProThrGlySerGluAsnLeu

.multidot. 200 .multidot. .multidot.
LysSerLeuPheAsnThrValCysValIleTrpCysIleHisAla

.multidot. .multidot. .multidot.
.multidot. .multidot.
GluGluLysValLysAspThrGluGlyAlaLysGlnIleValArg

.multidot. .multidot. 300 .multidot.
ArgHisLeuValAlaGluThrGlyThrAlaGluLysNetProSer

.multidot. .multidot. .multidot.
.multidot. .multidot.

```
    ThrSerArgProThrAlaProSerSerGluLysGlyGlyAsnTyr

             .multidot.          .multidot.          .multidot.        400
    ProValGlnHisValGlyGlyAsnTyrThrHisIleProLeuSer

         .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    ProArgThrLeuAsnAlaTrpValLysLeuValGluGluLysLys

             .multidot.          .multidot.          .multidot.
.multidot.
    PheGlyAlaGluValValProGlyPheGlnAlaLeuSerGluGly

      500          .multidot.          .multidot.          .multidot.
.multidot.
    CysThrProTyrAspIleAsnGlnMetLeuAsnCysValGlyAsp

             .multidot.          .multidot.          .multidot.
.multidot.
    HisGlnAlaAlaMetGlnIleIleArgGluIleIleAsnGluGlu

         .multidot.        600          .multidot.          .multidot.
.multidot.
    AlaAlaGluTrpAspValGlnHisProIleProGlyProLeuPro

             .multidot.          .multidot.          .multidot.
.multidot.
    AlaGlyGlnLeuArgGluProArgGlySerAspIleAlaGlyThr

         .multidot.          .multidot.        700          .multidot.
.multidot.
    ThrSerThrValGluGluGlnIleGlnTrpMetPheArgProGln

    AsnProValProValGlyAsnIleTyrArgArgTrpIleGlnIle

         .multidot.          .multidot.          .multidot.        800
.multidot.
    GlyLeuGlnLysCysValArgMetTyrAsnProThrAsnIleLeu

             .multidot.          .multidot.          .multidot.
.multidot.
    AspIleLysGlnGlyProLysGluProPheGlnSerTyrValAsp

         .multidot.          .multidot.          .multidot.
.multidot.        900
    ArgPheTyrLysSerLeuArgAlaGluGlnThrAspProAlaVal

             .multidot.          .multidot.          .multidot.
.multidot.
    LysAsnTrpMetThrGlnThrLeuLeuValGlnAsnAlaAsnPro

         .multidot.          .multidot.          .multidot.
.multidot.
    AspCysLysLeuValLeuLysGlyLeuGlyMetAsnProThrLeu

       1000          .multidot.          .multidot.          .multidot.
    GluGluMetLeuThrAlaCysGlnGlyValGlyGlyProGlyGln

         .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    LysAlaArgLeuMetAlaGluAlaLeuLysGluValIleGlyPro

             .multidot.      1100          .multidot.          .multidot.
    AlaProIleProPheAlaAlaAlaGlnGlnArgLysAlaPheLys

         .multidot.          .multidot.          .multidot.
```

.multidot. .multidot.
CysTrpAsnCysGlyLysGluGlyHisSerAlaArgGlnCysArg

.multidot. .multidot. 1200 .multidot.
AlaProArgArgGlnGlyCysTrpLysCysGlyLysProGlyHis

.multidot. .multidot. .multidot.
.multidot. .multidot.
IleMetThrAsnCysProAspArgGlnAlaGlyPheLeuGlyLeu

.multidot. .multidot. .multidot. 1300
GlyProTrpGlyLysLysProArgAsnPheProValAlaGlnVal

.multidot. .multidot. .multidot.
.multidot. .multidot.
ProGlnGlyLeuThrProThrAlaProProValAspProAlaVal

.multidot. .multidot. .multidot.
.multidot.
AspLeuLeuGluLysTyrMetGlnGlnGlyLysArgGlnArgGlu

1400 .multidot. .multidot. .multidot.
.multidot.
GlnArgGluArgProTyrLysGluValThrGluAspLeuLeuHis

.multidot. .multidot. .multidot.
.multidot.
LeuGluGlnGlyGluThrProTyrArgGluProProThrGluAsp

.multidot. 1500 .multidot. .multidot.
LeuLeuHisLeuAsnSerLeuPheGlyLysAspGln

.multidot. .multidot. .multidot.

31. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

|ArgLysAlaPheLys
|
| .multidot. .multidot.
CysTrpAsnCysGlyLysGluGlyHisSerAlaArgGlnCysArg

.multidot. .multidot. 1200 .multidot.
AlaProArgArgGlnGlyCysTrpLysCysGlyLysProGlyHis

.multidot. .multidot. .multidot.
.multidot. .multidot.
IleMetThrAsnCysProAspArgGlnAlaGlyPheLeuGlyLeu

.multidot. .multidot. .multidot. 1300
GlyProTrpGlyLysLysProArgAsnPheProValAlaGlnVal

.multidot. .multidot. .multidot.
.multidot. .multidot.
ProGlnGlyLeuThrProThrAlaProProValAspProAlaVal

.multidot. .multidot. .multidot.
.multidot.
AspLeuLeuGluLysTyrMetGlnGlnGlyLysArgGlnArgGlu

1400 .multidot. .multidot. .multidot.
.multidot.
GlnArgGluArgProTyrLysGluValThrGluAspLeuLeuHis

.multidot. .multidot. .multidot.
.multidot.

LeuGluGlnGlyGluThrProTyrArgGluProProThrGluAsp

.multidot. 1500 .multidot. .multidot.
.multidot.
LeuLeuHisLeuAsnSerLeuPheGlyLysAspGln

32. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

MetGlyAlaArgAsnSerValLeuArgGlyLysLysAlaAspGlu

.multidot. .multidot. .multidot.
.multidot.
LeuGluArgIleArgLeuArgProGlyGlyLysLysLysTyrArg

.multidot. .multidot. .multidot.
.multidot. .multidot.
LeuLysHisIleValTrpAlaAlaAsnLysLeuAspArgPheGly

100 .multidot. .multidot. .multidot.
LeuAlaGluSerLeuLeuGluSerLysGluGlyCysGlnLysIle

.multidot. .multidot. .multidot.
.multidot. .multidot.
LeuThrValLeuAspProNetValProThrGlySerGluAsnLeu

.multidot. 200 .multidot. .multidot.
LysSerLeuPheAsnThrValCysValIleTrpCysIleHisAla

.multidot. .multidot. .multidot.
.multidot. .multidot.
GluGluLysValLysAspThrGluGlyAlaLysGlnIleValArg

.multidot. .multidot. 300 .multidot.
ArgHisLeuValAlaGluThrGlyThrAlaGluLysMetProSer

.multidot. .multidot. .multidot.
.multidot. .multidot.
ThrSerArgProThrAlaProSerSerGluLysGlyGlyAsnTyr

.multidot. 400

33. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

ProValGlnHisValGlyGlyAsnTyrThrHisIleProLeuSer

.multidot. .multidot. .multidot.
.multidot. .multidot.
ProArgThrLeuAsnAlaTrpValLysLeuValGluGluLysLys

.multidot. .multidot. .multidot.
.multidot.
PheGlyAlaGluValValProGlyPheGlnAlaLeuSerGluGly

500 .multidot. .multidot. .multidot.
.multidot.
CysThrProTyrAspIleAsnGlnMetLeuAsnCysValGlyAsp

.multidot. .multidot. .multidot.
.multidot.
HisGlnAlaAlaMetGlnIleIleArgGluIleIleAsnGluGlu

.multidot. 600 .multidot. .multidot.
.multidot.
AlaAlaGluTrpAspValGlnHisProIleProGlyProLeuPro

.multidot. .multidot. .multidot.
.multidot.
AlaGlyGlnLexArgGluProArgGlySerAspIleAlaGlyThr

.multidot. .multidot. 700 .multidot.
.multidot.
ThrSerThrValGluGluGlnIleGlnTrpMetPheArgProGln

AsnProValProValGlyAsnIleTyrArgArgTrpIleGlnIle

.multidot. .multidot. .multidot. 800
.multidot.
GlyLeuGlnLysCysValArgMetTyrAsnProThrAsnIleLeu

.multidot. .multidot. .multidot.
.multidot.
AspIleLysGlnGlyProLysGluProPheGlnSerTyrValArp

.multidot. .multidot. .multidot.
.multidot. 900
ArgPheTyrLysSerLeuArgAlaGluGlnThrAspProAlaVal

.multidot. .multidot. .multidot.
.multidot.
LysAsnTrpMetThrGlnThrLeuLeuValGlnAsnAlaAsnPro

.multidot. .multidot. .multidot.
.multidot. .multidot.
AspCysLysLeuValLeuLysGlyLeuGlyMetAsnProThrLeu

1000 .multidot. .multidot. .multidot.
GluGluMetLeuThrAlaCysGlnGlyValGlyGlyProGlyGln

.multidot. .multidot. .multidot.
.multidot. .multidot.
LysAlaArgLeuMetAlaGluAlaLeuLysGluValIleGlyPro

.multidot. 1100 .multidot. .multidot.
AlaProIleProPheAlaAlaAlaGlnGln

34. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

ENVRN
MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys

.multidot. .multidot. .multidot.
.multidot.
LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro

.multidot. .multidot. .multidot.
.multidot. .multidot.
ThrTrpLysAsnAlaThrIleProLeuPheCysAlaThrArgAsn

100 .multidot. .multidot. .multidot.
ArgAspThrTrpGlyThrIleGlnCysLeuProAspAstAspAsp

.multidot. .multidot. .multidot.
.multidot. .multidot.
TyrGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp

.multidot. 200 .multidot. .multidot.
AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu

.multidot. .multidot. .multidot.

```
.multidot.          .multidot.
    PheGluThrSerIleLysProCysValLysLeuThrProLeuCys

              .multidot.          .multidot.        300          .multidot.
    ValAlaMetLysCysSerSerThrGluSerSerThrGlyAsnAsn

         .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    ThrThrSerLysSerThrSerThrThrThrThrProThrAsp

              .multidot.          .multidot.          .multidot.        400
    GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsp

         .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe

              .multidot.          .multidot.          .multidot.
.multidot.
    AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu

       500          .multidot.          .multidot.          .multidot.
.multidot.
    ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr

              .multidot.          .multidot.          .multidot.
.multidot.
    AsnGlnThrGlnCysTyrMetAsnHisCysAsnThrSerValIle

         .multidot.        600          .multidot.          .multidot.
.multidot.
    ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg

              .multidot.          .multidot.          .multidot.
.multidot.
    TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr

         .multidot.          .multidot.        700          .multidot.
.multidot.
    AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer

    ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly

         .multidot.          .multidot.          .multidot.        800
.multidot.
    PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis

              .multidot.          .multidot.          .multidot.
.multidot.
    GlyArgAspAsnArgThrIleIleSerLeuAsnLysTyrTyrAsn

         .multidot.          .multidot.          .multidot.
.multidot.        900
    LeuSerLeuHisCysLysArgProGlyAsnLysThrValLysGln

              .multidot.          .multidot.          .multidot.
.multidot.
    IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro

         .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys

          1000          .multidot.          .multidot.          .multidot.
    TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro
```

```
        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla

              .multidot.      1100          .multidot.          .multidot.
    ProGlyLysGlySerAspProGluValAlaTyrMetTrpThrAsn

        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn

              .multidot.          .multidot.      1200          .multidot.
    TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle

        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr

              .multidot.          .multidot.          .multidot.      1300
    LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr

        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    SerIleIleAlaAsnIleAspTrpGlnAsnAstAsnGlnThrAsn

              .multidot.          .multidot.          .multidot.
.multidot.
    IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu

     1400          .multidot.          .multidot.          .multidot.
.multidot.
    GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro

    ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg

        .multidot.      1500          .multidot.          .multidot.
.multidot.
    GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly

              .multidot.          .multidot.          .multidot.
.multidot.
    SerAlaMetGlyAlaArgAlaSerLeuThrValSerAlaGlnSer

        .multidot.          .multidot.      1600          .multidot.
.multidot.
    ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu

              .multidot.          .multidot.          .multidot.
.multidot.
    AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp

        .multidot.          .multidot.          .multidot.      1700
.multidot.
    GlyThrLysAsnLeuGlnAlaArgValThrAlaIleGluLysTyr

                        .multidot.          .multidot.          .multidot.
    LeuGlnAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg

        .multidot.          .multidot.          .multidot.
.multidot.      1800
    GlnValCysHisThrThrValProTrpValAsnAspSerLeuAla

              .multidot.          .multidot.          .multidot.
.multidot.
    ProAspTrpAspAsnMetThrTrpGlnGluTrpGluLysGlnVal
```

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        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGlnAlaGln

          1900          .multidot.          .multidot.          .multidot.
    IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer

        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    TrpAspIlePheGlyAsnTrpPheAspLeuThrSerTrpValLys

              .multidot.      2000          .multidot.          .multidot.
    TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu

        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys

              .multidot.          .multidot.      2100          .multidot.
    GlyTyrArgProValPheSerSerProProGlyTyrIleGlnGln

    IleEisIleEisLysAspArgGlyGlnProAlaAsnGluGluThr

              .multidot.          .multidot.          .multidot.      2200
    GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp

        .multidot.          .multidot.          .multidot.
.multidot.          .multidot.
    ProIleAlaTyrIleHisPheLeuIleArgGlnLeuIleArgLeu

              .multidot.          .multidot.          .multidot.
.multidot.
    LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer

     2300          .multidot.          .multidot.          .multidot.
.multidot.
    PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu

              .multidot.          .multidot.          .multidot.
.multidot.
    ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGluTrpIleGln

        .multidot.      2400          .multidot.          .multidot.
.multidot.
    GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla

              .multidot.          .multidot.          .multidot.
.multidot.
    GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleGlyArg

        .multidot.          .multidot.      2500          .multidot.
.multidot.
    GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGluIle

              .multidot.          .multidot.          .multidot.
.multidot.
    AlaLeuLeu***GlyThrAlaValSerAlnGlyArgLeuTyrGlu

        .multidot.          .multidot.          .multidot.      2600
.multidot.
    TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal

              .multidot.          .multidot.          .multidot.
.multidot.
    GlnAlaThrLysTyrGly
```

.multidot. .multidot.

35. The nucleic acid of anyone of claims 28 to 34 which is formed a recombinant nucleic acid comprising a nucleic acid from a vector and in which said cDNA or part of said cDNA is inserted.

36. The recombinant nucleic acid of claim 35 which is labelled.

37. A process for the detection of HIV-2 retrovirus or of its RNA in a biological liquid or tissue, particularly for the in vitro diagnosis in man of the potentiality or existence of LAS or of AIDS, which comprises contacting nucleic acids contained in said biological liquid or tissue with a probe containing a nucleic acid according to anyone of claims 28 to 36 under stringent hybridization conditions for the time necessary for said hybridization to occur, washing the hybride formed with a solution ensuring the preservation of said stringent conditions, and detecting the hybride formed.

38. A process for the production of HIV-2 retrovirus which comprises culturing human T4 lymphocytes or permanent cell lines derived from said T4 lymphocytes and carrying the T4 phenotype, which lymphocytes or cell lines had previously been infected with an isolate of HIV-2 virus and, particularly when the level of reverse transcriptase activity has reached a determined threshold, recovering and purifying the amounts of virus released in the culture medium of said lymphocytes or cell lines, particularly by differential centrifugation in a gradient of sucrose or metrizamide.

39. A process for the production of specific antigen of HIV-2 retrovirus which comprises lysing, particularly by means of detergent such as SDS (for instance 0.1% SDS in a RIPA buffer) and recovering the lysate containing said antigens;

40. Process for the production of one of the above defined proteins (**p12**, p16 or p26) or of a protein having the structure of gp140 or of determined parts of said proteins, which process comprises inserting the corresponding nucleic acid sequence in a vector capable of transforming an appropriate host,enabling the expression of an insert containing in said vector, transforming said host by said vector which comprises the said nucleotidic sequence, culturing the transformed cell lines host, recovering and purifying the expressed protein.

41. Process for the production of a hybridization probe for the detection of the RNA of HIV-2 retrovirus which comprises a DNA sequence, particularly according to anyone of claims 27 to 35, in a cloning vector by in vitro recombination, cloning the modified vector obtained in a competent cellular host, and recovering the DNA-recombinants obtained.

L3 ANSWER 2 OF 10 USPATFULL on STN
2003:95935 Methods and kits for diagnosing human immunodeficiency virus type 2 (HIV-2), proteins of HIV-2, and vaccinating agents for HIV-2.
Alizon, Marc, Paris, FRANCE
Montagnier, Luc, Le Plessis Robinson, FRANCE
Guetard, Denise, Paris, FRANCE
Clavel, Francois, Rockville, MD, United States
Sonigo, Pierre, Paris, FRANCE
Guyader, Mireille, Toulouse, FRANCE
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)
US 6544728 B1 20030408
APPLICATION: US 1991-810908 19911220 (7)
PRIORITY: FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324

DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for diagnosing an HIV-2 (LAV-II) infection and a kit containing reagents for the same is disclosed. These reagents include cDNA probes which are capable of hybridizing to at least a portion of the genome of HIV-2. In one embodiment, the DNA probes are capable of hybridizing to the entire genome of HIV-2. These reagents also include polypeptides encoded by some of these DNA sequences.

CLM What is claimed is:

1. An in vitro diagnostic method for detecting the presence or absence of **antibodies** that bind to antigens of a Human Immunodeficiency Virus Type 2 (HIV-2), comprising: (a) contacting a biological sample with one or more isolated polypeptide expression products of HIV-2 selected from the group consisting of **p12**, Q protein, R protein, X protein, F protein, TAT, and ART; and (b) detecting the formation of antigen-**antibody** complex between said polypeptide expression products and **antibodies** present in the biological sample.

2. The method of claim 1, wherein the formation of antigen-**antibody** complex is detected by radioimmunoassay (RIA), radioimmunoprecipitation assay (RIPA), immunoflourescence assay (IFA), enzyme-linked immunosorbent assay (ELISA), or Western blot.

3. An in vitro diagnostic kit for detecting the presence or absence of **antibodies** in a biological sample that bind to antigens of Human Immunodeficiency Virus Type 2 (HIV-2) comprising: one or more isolated polypeptide expression products of HIV-2 selected from the group consisting of **p12**, Q protein, R protein, X protein, F protein, TAT, and ART; reagents for detecting the formation of antigen-**antibody** complex between said polypeptide expression product and **antibodies** present in said biological sample; and a biological reference sample lacking **antibodies** recognized by said polypeptide expression products; wherein said polypeptide expression products, reagents, and biological reference material are present in an amount sufficient to detect the formation of antigen-**antibody** complex.

4. An in vitro diagnostic method for detecting the presence or absence of **antibodies** that bind to antigens of a Human Immunodeficiency Virus Type 2 (HIV-2), comprising: (a) contacting a biological sample with one or more isolated polypeptide expression products of HIV-2 selected from the group consisting of polymerase and env protein; and (b) detecting the formation of antigen-**antibody** complex between said polypeptide expression products and **antibodies** present in the biological sample.

5. The method of claim 4, wherein the formation of antigen-**antibody** complex is detected by radioimmunoassay (RIA), radioimmunoprecipitation assay (RIPA), immunoflourescence assay (IFA), enzyme-linked immunosorbent assay (ELISA), or Western blot.

6. An in vitro diagnostic kit for detecting the presence or absence of **antibodies** in a biological sample that bind to antigens of Human Immunodeficiency Virus Type 2 (HIV-2) comprising: one or more isolated polypeptide expression products of HIV-2 selected from the group consisting of polymerase and env protein; reagents for detecting the formation of antigen-**antibody** complex between said polypeptide expression product and **antibodies** present in said biological sample; and a biological reference sample lacking **antibodies** recognized by said polypeptide expression products; wherein said polypeptide expression products, reagents and biological reference material are present in an amount sufficient to detect the formation of antigen-**antibody** complex.

L3 ANSWER 3 OF 10 USPATFULL on STN
2002:99071 A METHOD FOR PREPARING A VIRAL EXTRACT CONTAINING HIV-II RNA.
Montagnier, Luc, Le Plessis Robinson, FRANCE

Chamaret, Solange, Paris, FRANCE
Guetard, Denise, Paris, FRANCE
Alizon, Marc, Paris, FRANCE
Clavel, Francois, Paris, FRANCE
Guyader, Mireille, Paris, FRANCE
Sonigo, Pierre, Paris, FRANCE
Brun-Vezinet, Francoise, Paris, FRANCE
Rey, Marianne, Paris, FRANCE
Rouzioux, Christine, Paris, FRANCE
Katlama, Christine, Paris, FRANCE
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)
US 2002051967 A1 20020502
APPLICATION: US 2001-862511 A1 20010523 (9)
PRIORITY: WO 1987-FR25 19870122
FR 1986-910 19860122
FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
DOCUMENT TYPE: Utility; APPLICATION.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a new class of retroviruses, designated by HIV-2, of which samples have been deposited to the ECACC under numbers 87.01.1001 and 87.01.1002 and to the NCIB under numbers 12.398 and 12.399.

It relates also to antigens capable to be obtained from this virus, particularly prcteins p12, p16, p26 and gp140. These various antigens can be used for the diagnosis of the disease, especially by contacting these antigens with a serum of a patient submitted to the diagnosis.

It relates to immunogenic compositions containing more particularly the glycoprotein gp140. Finally it concerns nucleotidic sequences, which can be used especially as hybridization probes, derived from the RNA of HIV-2.
CLM What is claimed is:
1. HIV-2 retrovirus or variance of this virus, which retrovirus has infectious properties with respect to human T4 lymphocytes and the essential morphological and immunological properties of any of the retroviruses deposited at the CNCM under N° I-502, I-532, I-642 and I-643.

2. The purified retrovirus of claim 1 which possesses the following properties: the preferred target for the HIV-2 retrovirus consists of human Leu 3 cells (or T4 lymphocytes) and for permanent cell lines derived of said T4 lymphocytes; it is cytotoxic for the human T4 lymphocytes which it infects; it has a reverse transcriptase activity which requires the presence of Mg^{2+} ions and has a strong affinity for poly adenylate oligodeoxythymidylate (poly(A)-oligo(dT) 12-18) it has a density of approximately 1.16 in a sucrose gradient; it has a mean diameter of 140 nanometers and a core having mean diameter of 41 nanometers it can be cultivated in permanent cell lines expressing the T4 protein; it is not infectious in T8 lymphocytes the lysates of this virus contain p26 protein which does not crossreact immunologically with p24 protein of the HTLV-1 virus or of the HTLV-2 ; said lysates further contain p-16 protein which is not recognized immunologically by p19 protein of HTLV-1 or of HTLV-2 in radioimmunoprecipitation assays; said lysates further contain an envelope glycoprotein having a molecular weight of the order of 130,000- 140,000 which does not crossreact immunologically with gp110 of HTLV-1 retrovirus ; said lysates further contain a molecule which can be labelled by ^{35S}-cystein, having an apparent molecular weight of about 36,000; the genomic RNA of HIV-2 hybridizes neither with the genomic RNA, nor with the EhV qene, nor with the LTRs of HIV-1 under stringent conditions; the genomic RNA of HIV-2 hybridizes weakly under non-stringent conditions with nucleotide

sequences of the GAG region of the HIV-1 genome.

3. The retrovirus of claim 2 whose lysates also contain a molecule having an apparent molecular weight of 42,000-45,000.

4. The retrovirus of any of claims 1 to 3, wherein the nucleotidic sequence of its genomic RNA which comprises the R region and the U3 region also comprises a nucleotidic sequence which corresponds with the following nucleotide sequence:

GTGGAAGGCGAGACTGAAAGCAAGAGGAATACCATTTAGTTAAAGGACAG

GAACAGCTATACTTGGTCAGGGCAGGAAGTAACTAACAGAAACAGCTGAG

ACTGCAGGGACTTTCCAGAAGGGGCTGTAACCAAGGGAGGGACATGGGAG

GAGCTGGTGGGGAACGCCTCATATTCTCTGTATAATATACCCGCTGCTTG

CATTGTACTTCAGTCGCTCTGCGGAGAGGCTGGCAGATTGAGCCCTGGAG

GATCTCTCCAGCACTAGACGGATGAGCCTGGGTGCCCTGCTAGACTCTCA

CCAGCACTTGGCCGGTGCTGGCAGACGGCCCCACGCTTGCCTGCTTAAAA

ACCTTCCTTAATAAAGCTGCAGTAGAAGCA

5. The retrovirus of anyone of claims 1 to 4 whose genomic RNA also contains a GAG sequence which corresponds with the following nucleotide sequence

```
ATGGGCGCGAGAAACTCCGTCTTGAGAGGGAAAAAAGCAGATGAA
          *          *          *          *

TTAGAAAGAATCAGGTTACGGCCCGGCGCAAAGAAAAAGTACAGG
    *          *          *          *          *

CTAAAACATATTGTGTGGGCAGCGAATAAATTGGACAGATTCGGA
       100         *          *          *

TTAGCAGAGAGCCTGTTGGAGTCAAAAGAGGGTTGTCAAAAAATT
    *          *          *          *          *

CTTACAGTTTTAGATCCAATGGTACCGACAGGTTCAGAAAATTTA
          *       200          *          *

AAAAGTCTTTTTAATACTGTCTGCGTCATTTGGTGCATACACGCA
    *          *          *          *          *

GAAGAGAAAGTGAAAGATACTGAAGGAGCAAAACAAATAGTGCGG
          *          *       300          *

AGACATCTACTGGCAGAAACAGGAACTGCAGAGAAAATGCCAAGC
    *          *          *          *          *

ACAAGTAGACCAACAGCACCATCTAGCGAGAAGGGAGGAAATTAC
          *          *          *       400

CCAGTGCAACATGTAGGCGGCAACTACACCCATATACCGCTGAGT
    *          *          *          *          *

CCCCGAACCCTAAATGCCTGGCTAAAATTAGTAGACGAAAAAAAG
          *          *          *          *

TTCGGCGCAGAAGTAGTGCCAGGATTTCAGGCACTCTCAGAAGGC
  500         *          *          *          *
```

```
TGCACGCCCTATGATATCAACCAAATGCTTAATIUTGTGGGCCAC
          *          *          *          *

CATCAAGCAGCCATGCAGATAATCAGGGAGATTATCAATGAGGAA
     *        600          *          *          *

GCAGCAGAATGGGATGTGCAACATCCAATACCAGGCCCCTTACCA
          *          *          *          *

GCGGGGCAGCTTAGAGAGCCAAGGGGATCTGACATAGCAGGGACA
     *          *        700          *          *

ACAAGCACAGTAGAAGAACAGATCCAGTGGATGTTTAGGCCACAA

AATCCTGTACCAGTAGGAAACATCTATAGAAGATGGATCCAGATA
     *          *          *        800          *

GGATTGCAGAAGTGTGTCAGGATGTACAACCCGACCAACATCCTA
          *          *          *          *

CACATAAAACAGGGACCAAAGGAGCCCTTCCAAAGCTATGTAGAT
     *          *          *          *        900

AGATTCTACAAAAGCTTGAGGGCAGAACAAACAGATCCAGCAGTG
          *          *          *          *

AAGAATTGGATGACCCAAACACTGCTAGTACAAAATGCCAACCCA
     *          *          *          *          *

GACTGTAAATTAGTGCTAAAAGGACTAGGGATGAACCCTACCTTA
       1000          *          *          *

GAAGAGATGCTGACCGCCTGTCAGGGGGTAGGTGGGCCAGGCCAG
     *          *          *          *          *

AAAGCTAGATTAATGGCAGAGGCCCTGAAAGAGGTCATAGGACCT
          *       1100          *          *

GCCCCTATCCCATTCGCAGCAGCCCAGCAGAGAAAGCCATTTAAA
     *          *          *          *          *

TGCTGGAACTGTGGAAAGGAAGGGCACTCGGCAAGACAATGCCGA
          *          *       1200          *

GCACCTACAAGGCAGGGCTGCTGGAAGTCTGGTAAGCCACGACAC
     *     *               *          *          *

ATCATCACAAACTGCCCAGATAGACAGGCAGGTTTTTTAGGACTG
          *          *          *       1300

GGCCCTTGGGGAAAGAAGCCCCGCAACTTCCCCGTGGCCCAAGTT
     *          *          *          *          *

CCGCAGCGGCTGACACCAACAGCACCCCCAGTGGATCCAGCACTG
          *          *          *          *

GATCTACTGGAGAAATATATGCAGCAAGGGAAAAGACAGAGAGAG
 1400          *          *          *          *

CAGAGAGAGAGACCATACAACGAACTCACAGAGGACTTACTGCAC
         *          *        *          *

CTCGAGCAGGGGGAGACACCATACAGGGAGCCACCAACAGAGGAC
     *       1500          *          *          *

TTGCTGCACCTCAATTCTCTCTTTGGAAAAGACCAG
```

* * *

6. The retrovirus of anyone of claims 1 to 5 whose genomic RNA contains an ENV sequence which corresponds with the following nucleotide sequence:

ATGATGAATCAGCTGCTTATTGCCATTTTATTAGCTAGTGCTTGC
* * * *

TTAGTATATTGCACCCAATATGTAACTGTTTTCTATGGCGTACCC
* * * * *

ACGTGGAAAAATGCAACCATTCCCCTCTTTTGTGCAACCAGAAAT
100 * * *

AGGGATACTTGGGGAACCATACAGTGCTTGCCTGACAATGATGAT
* * * * *

TATCAGGAAATAACTTTGAATGTAACACAGGCTTTTGATGCATGG
200 * *

AATAATACAGTAACAGAACAAGCAATAGAAGATGTCTGGCATCTA
* * * *

TTCGAGACATCAATAAAACCATGTGTCAAACTAACACCTTTATGT
* * 300 *

GTAGCAATGAAATCCAGCAGCACAGAGAGCAGCACAGGGAACAAC
* * * * *

ACAACCTCAAAGAGCACAAGCACAACCACAACCACACCCACAGAC
* * * 400

CAGGAGCAAGAGATAAGTGAGGATACTCCATGCGCACGCGCAGAC
* * * * *

AACTGCTCAGGATTGGGAGAGGAAGAAACGATCAATTGCCAGTTC
* * * *

AATATGACAGGATTAGAAAGAGATAAGAAAAAACAGTATAATGAA
500 * * * *

ACATGGTACTCAAAAGATGTGGTTTGTGAGACAAATAATAGCACA
* * * *

AATCAGACCCAGTGTTACATGAACCATTGCAACACATCAGTCATC
* 600 * * *

ACAGAATCATGTGACAAGCACTATTGGGATGCTATAAGGTTTAGA
* * * *

TACTGTGCACCACCGGGTTATGCCCTATTAAGATGTAATGATACC
* * 700 * *

AATTATTCAGGCTTTGCACCCAACTGTTCTAAAGTAGTAGCTTCT

ACATGCACCAGGATGATGGAAACGCAAACTTCCACATGGTTTGGC
* * * 800 *

TTTAATGGCACTAGAGCAGAGAATAGAACATATATCTATTGGCAT
* * * *

GGCAGAGATAATAGAACTATCATCAGCTTAAACAAATATTATAAT
* * * * 900

CTCAGTTTGCATTGTAAGAGGCCAGGGAATAAGACAGTGAAACAA

```
          *          *          *          *

ATAATGCTTATGTCAGGACATGTGTTTCACTCCCACTACCAGCCG
     *          *          *          *          *

ATCAATAAAAGACCCAGACAAGCATGGTGCTGGTTCAAAGGCAAA
       1000          *          *          *

TGGAAAGACGCCATGCAGGAGGTGAAGACCCTTGCAAAACATCCC
     *          *          *          *          *

AGGTATAGAGGAACCAATGACACAAGGAATATTAGCTTTGCAGCG
          *       1100          *          *

CCAGGAAAAGGCTCAGACCCAGAAGTAGCATACATGTGGACTAAC
     *          *          *          *          *

TGCAGAGGAGAGTTTCTCTACTGCAACATGACTTGGTTCCTCAAT
          *          *       1200          *

TGGATAGAGAATAAGACACACCGCAATTATGCACCGTGCCATATA
     *          *          *          *          *

AAGCAAATAATTAACACATGGCATAAGGTAGGGAGAAATGTATAT
          *          *          *       1300

TTGCCTCCCAGGGAAGGGGAGCTGTCCTGCAACTCAACAGTAACC
     *          *          *          *          *

AGCATAATTGCTAACATTGACTGGCAAAACAATAATCAGACAAAC
          *          *          *          *

ATTACCTTTAGTGCAGAGGTGGCAGAACTATACAGATTGGAGTTG
 1400          *          *          *          *

GGAGATTATAAATTGGTAGAAATAACACCAATTGGCTTCGCACCT

ACAAAAGAAAAAAGATACTCCTCTGCTCACGGGAGACATACAAGA
     *       1500          *          *          *

GGTGTGTTCGTGCTAGGGTTCTTGGGTTTTCTCGCAACAGCAGGT
          *          *          *          *

TCTGCAATGGGCGCTCGAGCGTCCCTGACCGTGTCGGCTCAGTCC
     *          *       1600          *          *

CGGACTTTACTGGCCGGGATAGTGCAGCAACAGCAACAGCTGTTG
          *          *          *          *

GACGTGGTCAAGAGACAACAAGAACTGTTGCGACTGACCGTCTGG
     *          *          *       1700          *

GGAACGAAAAACCTCCAGGCAAGAGTCACTGCTATAGAGAAGTAC
          *          *          *          *

CTACAGGACCAGGCGCGGCTAAATTCATGGGGATGTGCGTTTAGA
     *          *          *          *       1800

CAAGTCTGCCACACTACTGTACCATGGGTTAATGATTCCTTAGCA
          *          *          *          *

CCTGACTGGGACAATATGACGTGGCAGGAATGGGAAAAACAAGTC
     *          *          *          *          *

CGCTACCTGGAGGCAAATATCAGTAAAAGTTTAGAACAGGCACAA
       1900          *          *          *
```

```
ATTCAGCAAGAGAAAAATATGTATGAACTACAAAAATTAAATAGC
     *          *          *          *          *

TGGGATATTTTTGGCAATTGGTTTGACTTAACCTCCTGGGTCAAG
          *       2000          *          *

TATATTCAATATGGAGTGCTTATAATAGTAGCAGTAATAGCTTTA
     *          *          *          *          *

AGAATAGTGATATATGTAGTACAAATGTTAAGTAGGCTTAGAAAG
          *          *       2100          *

GGCTATAGGCCTGTTTTCTCTTCCCCCCCCGGTTATATCCAACAG

ATCCATATCCACAAGGACCGGGGACAGCCAGCCAACGAAGAAACA
          *          *          *       2200

GAAGAAGACGGTGGAAGCAACGGTGGAGACAGATACTGGCCCTGG
     *          *          *          *          *

GCGATAGCATATATACATTTCCTGATCCGCCAGCTGATTCGCCTC
          *          *          *          *

TTGACCAGACTATACAGCATCTGCAGGGACTTACTATCCAGGAGC
 2300          *          *          *          *

TTCCTGACCCTCCAACTCATCTACCAGAATCTCAGAGACTGGATG
          *          *          *          *

AGACTTAGAACAGCCTTCTTGCAATATGGGTGCGAGTGGATCCAA
     *       2400          *          *          *

GAAGCATTCCAGGCCGCCGCGAGGGCTACAAGAGAGACTCTTGCG
          *          *          *          *

GGCGCGTGCAGGGGCTTGTGGAGGGTATTGGAACGAATCGGGAGG
     *          *       2500          *          *

GGAATACTCGCGGTTCCAAGAAGGATCAGACAGGGAGCAGAAATC
          *          *          *          *

GCCCTCCTGTGAGGGACGGCAGTATCAGCAGGGAGACTTTATGAA
     *          *          *       2600          *

TACTCCATGGAAGGACCCAGCAGCAGAAAGGGAGAAAAATTTGTA
          *

CAGGCAACAAAATATGGA
```

7. The retrovirus of anyone of claims 1 to 6 whose RNA virtually hybridizes neither with the ENV gene and the LTR close to it, particularly with the nucleotide sequence 5290-9130 of MTV-1, nor with the sequences of the POL region of the HIV-1 genome, particularly with the nucleotide sequence 2170-2240 of HIV-1.

8. A composition comprising at least one antigen, particularly a protein or glycoprotein of HIV-2 virus according to anyone of claims 1 to 7.

9. The composition of claim 8 which consists of total extract or lysate of said retrovirus.

10. The composition of claim 8 wherein said antigen consists of at least one of the internal core proteins of said virus, particularly **p12**, p16 and p26, which have apparent molecular weight of the order of 12,000, 16,000 and 26,000.

11. The composition of claim 8, characterized in that it contains a gp140 glycoprotein having an apparent molecular weight of about 130,000-140,000.

12. An antigen which provides a single bound in electrophoresis on a polyacrylamid gel which comprises, in common with one of the purified antigens of HIV-2 retrovirus, an epitope that is recognized by the serum of a carrier of **antibody** against HIV-2.

13. A purified antigen having the immunological characteristics of one of the following proteins or glycoproteins of HIV-2: **p12**, p16, p26, p36, p42 and gp140.

14. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-**p12 antibodies**:

```
                                  ArgLysAlaPheLys
                                      *         *

    CysTrpAsnCysGlyLysGluGlyHisSerAlaArgGlnCysArg
             *         *      1200         *

    AlaProArgArgGlnGlyCysTrpLysCysClyLysProGlyHis
                  *         *         *         *

    IleMetThrAsnCysProAspArgGlnAlaGlyPheLeuGlyLeu
             *         *         *      1300

    GlyProTrpGlyLysLysProArgAsnPheProValAlaGlnVal
        *         *         *         *         *

    ProGlnGlyLeuThrProThrAlaProProValAspProAlaVal
             *         *         *         *

    AspLeuLeuGluLysTyrMetGlnGlnGlyLysArgGlnArgGlu
     1400         *         *         *         *

    GlnArgGluArgProTyrLysGluValThrGluAspLeuLeuHis
             *         *         *         *

    LeuGluGlnGlyGluThrProTyrArgGluProProThrGluAsp
        *      1500         *         *

    LeuLeuHisLeuAsnSerLeuPheGlyLysAspGln
```

15. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-p16 **antibodies**:

```
    MetGlyAlaArgAsnSerValLeuArgGlyLysLysAlaAspGlu
             *         *         *         *

    LeuGluArgIleArgLeuArgProGlyGlyLysLysLysTyrArg
        *         *         *         *         *

    LeuLysHisIleValTrpAlaAlaAsnLysLeuAspArgPheGly
           100         *         *         *

    LeuAlaGluSerLeuLeuGluSerLysGluGlyCysGlnLysIle
        *         *         *         *         *

    LeuThrValLeuAspProMetValProThrGlySerGluAsnLeu
             *      200         *         *

    LysSerLeuPheAsnThrValCysValIleTrpCysIleHisAla
        *         *         *         *         *
```

GluGluLysValLysAspThrGluGlyAlaLysGlnIleValArg
* * 300 *

ArgHisLeuValAlaGluThrGlyThrAlaGluLysMetProSer
* * * * *

ThrSerArgProThrAlaProSerSerGluLysGlyGlyAsnTyr

16. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-p26 **antibodies**:

ProValGlnHisValGlyGlyAsnTyrThrHisIleProLeuSer
* * * * *

ProArgThrLeuAsnAlaTrpValLysLeuValGluGluLysLys
* * * *

PheGlyAlaGluValValProGlyPheGlnAlaLeuSerGluGly
500 * * * *

CysThrProTyrAspIleAsnGlnMetLeuAsnCysValGlyAsp
* * * *

HisGluAlaAlaMetGlnPheIleArgGluIleIleAsnGluGlu
* 600 * * *

AlaAlaGluTrpAspValGlnHisProIleProGlyProLeuPro
* * * * *

AlaGlyGlnLeuArgGluProArgGlySerHisIleAlaGlyThr
* * 700 * *

ThrSerThrValGluGluGlnIleGlnTrpMetPheArgProGln

AsnProValProValGlyAsnIleTyrArgArgTrpIleGlnIle
* * * 800 *

GlyLeuGlnLysCysValArgMetTyrAsnProThrAsnIleLeu
* * * *

AspIleLysGlnGlnProLysGluProPheGlnSerTyrValAsp
* * * * 900

ArgPheTyrLysSerLeuArgAlaGluGlnThrAspProAlaVal
* * * *

LysAsnTrpMetThrGlnThrLeuLeuValGlnAsnAlaAsnPro
* * * * *

AspCysLysLeuValLeuLysGlyLeuGlyMetAsnProThrLeu
1000 * * *

GluGluMetLeuThrAlaCysGlnGlyValGlyGlyProGlyGln
* * * * *

LysAlaArgLeuMetAlaGluAlaLeuLysGluValIleGlyPro
* 1100 *

AlaProIleProPheAlaAlaAlaGlnGln

17. An antigen of claim 13 which has the following aminoacid sequence or a part of said sequence recognized by anti-gp140 **antibodies**:

MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys
* * * *

```
LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro
    *         *         *         *         *

ThrTrpTysAsnAlaThrIleProLeuPheCysAlaThrArgAsn
      100         *         *         *

ArgAspThrTrpGlyThrIleGlnCysLeuProAspAsnAspAsp
    *         *         *         *         *

TyrGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp
         *       200         *         *

AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu
    *         *         *         *         *

PheGluThrSerIleLysProCysValLysLeuThrProLeuCys
         *         *       300         *

ValAlaMetLysCysSerSerThrGluSerSerThrClyAsnAsn
    *         *         *         *         *

ThrThrSerLysSerThrSerThrThrThrThrThrProThrAsp
         *         *         *       400

GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsp
    *         *         *         *         *

AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe
         *         *      *            *

AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu
  500         *         *         *         *

ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr
         *         *         *         *

AsrGlnThrGlnCysTyrMetAsnHisCysAsnThrSerValIle
    *       600         *         *         *

ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg
         *         *         *         *

TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr
    *         *      700          *         *

AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer

ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly
    *         *         *       800         *

PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis
         *         *         *         *

GlyArgAspAsnAlaThrIleIleSerLeuAsnLysTyrTyrAsn
    *         *         *         *       900

LeuSerLeuHisCysLysArgProGlyAsnLysThrValLysGln
         *         *         *         *

IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro
    *         *         *         *         *

IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys
      1000         *         *         *
```

```
TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro
    *         *         *         *         *

ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla
         *      1100         *         *

ProGlyLysGlySerAspProGluValAlaTyrMetTrpThrAsn
    *         *         *         *         *

CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn
         *         *      1200         *

TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle
    *         *         *         *         *

LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr
         *         *         *      1300

LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr
    *         *         *         *         *

SerIleIleAlaAsnIleAsnTrpGlnAsnAsnAsnGlnThrAsn
         *         *         *         *

IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu
 1400         *         *         *         *

GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro

ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg
    *      1500         *         *         *

GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly
         *         *         *         *

SerAlaSerGlyAlaArgAlaSerLeuThrValSerAlaGlnSer
    *         *      1600         *         *

ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu
         *         *         *         *

AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp
    *         *         *      1700         *

GlyThrLysAsnLeuGlnAlaArgValThrAlaIleGluLysTyr
                   *         *         *

LeuGlnAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg
    *         *         *         *      1800

GlnValCysHisThrThrValProTrpValAsnAspSerLeuAla
         *         *         *         *

ProAspTrpAspAsnMetThrTrpGlnGluTrpGluLysGlnVal
    *         *         *         *         *

ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGlnAlaGln
      1900         *         *         *

IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer
    *         *         *         *         *

TrpAspIlePheGlyAsnTrpPheAspLeuThrSerTrpValLys
         *      2000         *         *

TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu
```

```
     *          *          *          *          *

ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys
          *          *      2100          *

GlyTyrArgProValPheSerSerProProGlyTyrIleGlnGln

IleHisIleHisLysAspArgGlyGlnProAlaAsnGluGluThr
          *          *          *      2200

GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp
     *          *          *          *          *

ProIleAlaTyrIleHisPheLeuIleArgGlnLeuIleArgLeu
          *          *          *          *

LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer
 2300          *          *          *          *

PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu
          *          *          *          *

ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGluTrpIleGln
     *      2400          *          *          *

GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla
          *          *          *          *

GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleGlyArg
     *          *      2500          *          *

GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGluIle
          *                          *          *          *

AlaLeuLeu.star..star..star.GlyThrAlaValSerAlaGlyArgLeuTyrGlu
     *          *          *      2600          *

TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal
          *          *          *          *

GlnAlaThrLysTyrGly
     *          *
```

18. A method for the in vitro detection of the presence of **antibodies** against anti-HIV-2 in a biological liquid, such as a serum, more particularly for the in vitro diagnosis of a potential or existing LAS or AIDS caused by HIV-2 type retrovirus, which comprises contacting a serum or other biological medium from the person to be diagnosed with a composition according to anyone of claims 8 to 11 or with an antigen according to anyone of claims 12 to 17, detecting the immunological conjuguate possibly formed between said anti-HIV-2-**antibodies** and the antigen or antigens used.

19. The method of claim 18 which comprises achieving the detection of said immunological conjuguate by reacting said immunological conjuguate possibly formed with a labelled reagent formed either by human antiimmunoglobulin-**antibodies** or of a bacterial A protein, and by detecting the complexe formed between the reagent and said immunological conjuguate.

20. Kit for the detection of anti-HIV-2-**antibodies** in a biological fluid, particularly of a person possibly carrying such **antibodies**, which comprises: a composition such as defined in anyone of claims 8 to 11 or an antigen such as defined in any of claims 12 to 17; and means for detecting the immunological complexe resulting from the immunological reaction between the antigen and said biological fluid.

21. The kit of claim 21, whose means for detecting the immunological complexe formed comprises human anti-immunoglobulins or a protein A and a means for detecting the complexe formed between the anti-HIV-2 **antibodies** contained in the detected immunological conjuguate.

22. Immunogenic compositions containing an envelope glycoprotein of HIV-2 retrovirus, such as gp140 of said retrovirus, or part of said glycoprotein, in association with a pharmaceutically acceptable vehicle appropriate for the constitution of vaccines effective against HIV-2.

23. The composition of claim 22 which contains at least part of an immunogenic glycoprotein comprising the proteic backbone having the following sequence:

```
ENVRN
MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys
          *         *         *         *

LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro
    *         *         *         *         *

ThrTrpLysAsnAlaThrIleProLeuPheCysAlaThrArgAsn
       100         *         *         *

ArgAspThrTrpGlyThrIleGlnCysLeuProAspAsnAspAsp
    *         *         *         *         *

TyrGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp
          *       200         *         *

AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu
    *         *         *         *         *

PheGluThrSerIleLysProCysValLysLeuThrProLeuCys
          *         *       300         *

ValAlaIleLysCysSerSerThrGluSerSerThrGlyAsnAsn
    *         *         *         *         *

ThrThrSerLysSerThrSerThrThrThrThrThrProThrAsp
          *         *         *       400

GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsn
    *         *         *         *         *

AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe
          *         *         *         *

AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu
  500         *         *         *         *

ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr
          *         *         *         *

AsnGlnThrGlnCysTyrMetAsnHisCysAsnThrSerValIle
    *       600         *         *         *

ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg
          *         *         *         *

TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr
    *         *       700         *         *

AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer
```

```
ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly
    *         *         *       800         *

PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis
         *         *         *         *

GlyArgAspAsnArgThrIleIleSerLeuAsnLysTyrTyrAsn
    *         *         *         *       900

LeuSerLeuHisCysLysArgProGlyAsnLysThrValTysGln
         *         *         *         *

IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro
    *         *         *         *         *

IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys
      1000         *         *         *

TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro
    *         *         *         *         *

ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla
         *      1100         *         *

ProGlyLysGlySerAspProGluValAlaTyrMerTrpThrAsn
    *         *         *         *         *

CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn
         *         *      1200         *

TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle
    *         *         *         *         *

LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr
         *         *         *      1300

LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr
    *         *         *         *         *

SerIleIleAlaAsnIleAspTrpGlnAsnAsnAsnGlnThrAsn
         *         *         *         *

IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu
 1400         *         *         *         *

GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro

ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg
    *      1500         *         *         *

GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly
         *         *         *         *

SerAlaMetGlyAlaArgAlaSerLeuThrValSerAlaGlnSer
    *         *      1600         *         *

ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu
         *         *         *         *

AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp
    *         *         *      1700         *

GlyThrLysAsnLeuGluAlaArgValThrAlaIleGluLysTyr
                   *         *         *

LeuGlnAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg
```

```
     *          *          *          *       1800

GluValCysHisThrThrValProTrpValAsnAspSerLeuAla
          *          *          *          *

ProAspTrpAspAsnMetThrTrpGluGluTrpGluLysGlnVal
     *          *          *          *          *

ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGlnAlaGln
       1900          *          *          *

IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer
     *          *          *          *          *

TrpAspIlePheGlyAsnTrpPheAspLeuThrSerThrValLys
          *       2000          *          *

TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu
     *          *          *          *          *

ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys
          *          *       2100          *

GlyTyrArgProValPheSerSerProProGlyTyrIleGlnGln

IleHisIleHisLysAspArgGlyGlnProAlaAsnGluGluThr
          *          *          *       2200

GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp
     *          *          *          *          *

ProIleAlaTyrIleHisPheLeuIleArgGlnLeuIleArgLeu
          *          *          *          *

LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer
 2300          *          *          *          *

PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu
          *          *          *          *

ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGlnTrpIleGlu
     *       2400          *          *          *

GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla
          *          *          *          *

GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleGlyArg
     *          *       2500          *          *

GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGluIle
          *                     *          *          *

AlaLeuLeu.star..star..star.GlyThrAlaValSerAlaGlyArgLeuTyrGlu
     *          *          *       2600          *

TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal
          *          *          *          *

GlnAlaThrLysTyrGly
     *          *
```

24. The immunogenic composition of claim 22 or of claim 23 which is dosed in antigen in order to enable the administration of a dosage-unit of 10 to 500, particularly from 50 to 100 µg/kg of bodyweight.

25. Monoclonal **antibody** characterized by its ability to specifically

recognize one of the antigens according to anyone of claims 14 to 17.

26. The secreting hybridomas of the monoclonal **antibody** of claim 25.

27. Nucleic acids, optionally labelled, derived of part at least of RNA of HIV-2 virus or of one of its variance.

28. The nucleic acid of claim 27, which contains at least part of the cDNA which corresponds with the entire genomic RNA of HIV-2 retrovirus.

29. The nucleic acid of claim 27, which contains the nucleotide sequence:

GTGGAAGGCGAGACTGAAAGCAAGAGGAATACCATTTAGTTAAAGGACAG

GAACAGCTATACTTGGTCAGGGCAGGAAGTAACTAACAGAAACAGCTGAG

ACTGCAGGGACTTTCCAGAAGGGGCTGTAACCAAGGGAGGGACATGGGAG

GAGCTGGTGGGGAACGCCTCATATTCTCTGTATAATATACCCGCTGCTTG

CATTGTACTTCAGTCGCTCTGCGGAGAGGCTGGCAGATTGAGCCCTGGAG

GATCTCTCCAGCACTAGACGGATGAGCCTGGGTGCCCTGCTAGACTCTCA

CCAGCACTTGGCCGGTGCTGGCAGACGGCCCCACGCTTGCCTGCTTAAAA

ACCTTCCTTAATAAAGCTGCAGTAGAAGCA

30. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

GAGRODN
MetGlyAlaArgAsnSerValLeuArgGlyLysLysAlaAspGlu
* * * *

LeuGluArgIleArgLeuArgProGlyGlyLysLysLysTyrArg
* * * * *

LeuLysHisIleValTrpAlaAlaAsnTyrLeuAspArgPheGly
100 * * *

LeuAlaGluSerLeuLeuGluSerLysGluGlyCysGlnLysIle
* * * * *

LeuThrValLeuAspProMetValProThrGlySerGluAsnLeu
* 200 * *

LysSerLeuPheAsnThrValCysValIleTrpCysIleHisAla
* * * * *

GluGluLysValLysAspThrGluGlyAlaLysGlnIleValArg
* * 300 *

ArgHisLeuValAlaGluThrGlyThrAlaGluLysMetProSer
* * * * *

ThrSerArgProThrAlaProSerSerGluLysGlyGlyAsnTyr
* * * 400

ProValGlnHisValGlyGlyAsnTyrThrHisIleProLeuSer
* * * * *

ProArgThrLeuAsnAlaTrpValLysLeuValGluGluLysLys
* * * *

```
PheGlyAlaGluValValProGlyPheGlnAlaLeuSerGluGly
  500          *          *          *          *

CysThrProTyrAspIleAsnGlnMetLeuAsnCysValGlyAsp
          *          *          *          *

HisGlnAlaAlaMetGlnIleIleArgGluIleIleAsnGluGlu
     *       600          *          *          *

AlaAlaGluTrpAspValGlnHisProIleProGlyProLeuPro
     *          *       700          *          *

ThrSerThrValGluGluGluIleGluTrpMetPheArgProGlu

AsnProValProValGlyAsnIleTyrArgArgTrpIleGluIle
     *          *          *       800          *

GlyLeuGlnLysCysValArgMetTyrAsnProThrAsnIleLeu
          *          *          *          *

AspIleLysGlnGlyProLysGluProPheGlnSerTyrValAsp
     *          *          *          *       900

ArgPheTyrLysSerLeuArgAlaGluGlnThrAspProAlaVal
          *          *          *          *

LysAsnTrpMetThrGlnThrLeuLeuValGlnAsnAlaAsnPro
     *          *          *          *          *

AspCysLysLeuValLeuLysGlyLeuGlyMetAsnProThrLeu
       1000          *          *          *

GluGluMetLeuThrAlaCysGlnGlyValGlyGlyProGlyGln
     *          *          *          *          *

LysAlaArgLeuMetAlaGluAlaLeuLysGluValIleGlyPro
          *       1100          *          *

AlaProIleProPheAlaAlaAlaGlnGlnArgLysAlaPheLys
     *          *          *          *          *

CysTrpAsnCysGlyTyrGluGlyHisSerAlaArgGluCysArg
          *          *       1200          *

AlaProArgArgGlnGlyCysTrpLysCysGlyLysProGlyHis
     *          *          *          *          *

IleMetThrAsnCysProAspArgGlnAlaGlyPheLeuGlyLeu
          *          *          *       1300

GlyProTrpGlyLysLysProArgAsnPheProValAlaGlnVal
     *          *          *          *          *

ProGlnGlyLeuThrProThrAlaProProValAspProAlaVal
          *          *          *          *

AspLeuLeuGluLysTyrMetGlnGlnGlyLysArgGlnArgGlu
 1400          *          *          *          *

GlnArgGluArgProTyrLysGluValThrGluAspLeuLeuHis
          *          *          *          *

LeuGluGlnGlyGluThrProTyrArgGluProProThrGluAsp
     *       1500          *          *

LeuLeuHisLeuAsnSerLeuPheGlyLysAspGln
```

31. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

```
                                ArgLysAlaPheLys

                                      *         *

 CysTrpAsnCysGlyLysGluGlyHisSerAlaArgGluCysArg

          *         *      1200         *

 AlaProArgArgGlnGlyCysTrpLysCysGlyLysProGlyHis

     *         *         *         *         *

 IleMetThrAsnCysProAspArgGlnAlaGlyPheLeuGlyLeu

          *         *         *      1300

 GlyProTrpGlyLysLysProArgAsnPheProValAlaGlnVal

     *         *         *         *         *

 ProGlnGlyLeuThrProThrAlaProProValAspProAlaVal

          *         *         *         *

 AspLeuLeuGluLysTyrMetGlnGlnGlyLysArgGlnArgGlu

  1400         *         *         *         *

 GlnArgGluArgProTyrLysGluValThrGluAspLeuLeuHis

          *         *         *         *

 LeuGluGlnGlyGluThrProTyrArgGluProProThrGluAsp

     *      1500         *         *

 LeuLeuHisLeuAsnSerLeuPheGlyLysAspGln
```

32. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

```
 MetGlyAlaArgAsnSerValLeuArgGlyLysLysAlaAspGlu

          *         *         *         *

 LeuGluArgIleArgLeuArgProGluGlyLysLysLysTyrArg

     *         *         *         *         *

 LeuLysHisIleValTrpAlaAlaAsnLysLeuAspArgPheGly

        100         *         *         *

 LeuAlaGluSerLeuLeuGluSerLysGluGlyCysGlnLysIle

     *         *         *         *         *

 LeuThrValLeuAspProMetValProThrGlySerGluAsnLeu

          *       200         *         *

 LysSerLeuPheAsnThrValCysValIleTrpCysIleHisAla
```

```
     *          *          *          *          *
GluGluLysValLysAspThrGluGlyAlaLysGlnIleValArg
          *          *        300          *
ArgHisLeuValAlaGluThrGlyThrAlaGluLysMetProSer
     *          *          *          *          *
ThrSerArgProThrAlaProSerSerGluLysGlyGlyAsnTyr
                                  *     400
```

33. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

```
ProValGlnHisValGlyGlyAsnTyrThrHisIleProLeuSer
     *          *          *          *          *
ProArgThrLeuAsnAlaTrpValLysLeuValGluGluLysLys
          *          *          *          *
PheGlyAlaGluValValProGlyPheGlnAlaLeuSerGluGly
  500          *          *          *          *
CysThrProTyrAspIleAsnGlnMetLeuAsnCysValGlyAsp
          *          *          *          *
HisGlnAlaAlaMetGlnIleIleArgGluIleIleAsnGluGlu
     *        600          *          *          *
AlaAlaGluTrpAspValGlnHisProIleProGlyProLeuPro
          *          *          *          *
AlaGlyGlnLeuArgGluProArgGlySerAspIleAlaGlyThr
     *          *        700          *          *
ThrSerThrValGluGluGlnIleGlnTrpMetPheArgProGln
AspProValProValGlyAsnIleTyrArgArgTrpIleGlnIle
     *          *          *        800          *
GlyLeuGlnLysCysValArgMetTyrAsnProThrAsnIleLeu
          *          *          *          *
AspIleLysGlnGlyProLysGluProPheGlnSerTyrValAsp
     *          *          *          *        900
ArgPheTyrLysSerLeuArgAlaGluGlnThrAspProAlaVal
          *          *          *          *
LysAsnTrpMetThrGlnThrLeuLeuValGlnAsnAlaAsnPro
```

```
     *          *          *          *          *

AspCysLysLeuValLeuLysGlyLeuGlyMetAsnProThrLeu

       1000          *          *          *

GluGluMetLeuThrAlaCysGlnGlyValGlyGlyProGlyGln

     *          *          *          *          *

LysAlaArgLeuMetAlaGluAlaLeuLysGluValIleGlyPro

          *       1100          *

AlaProIleProPheAlaAlaAlaGlnGln
```

34. The nucleic acid of claim 27, which contains a nucleotidic sequence coding for at least part of the aminoacid sequence indicated hereafter:

```
ENYRN
MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys

          *          *          *          *

LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro

     *          *          *          *          *

ThrTrpLysAsnAlaThrIleProLeuPheCysAlaThrArgAsn

       100          *          *          *

ArgAspThrTrpGlyThrIleGlnCysLeuProAspAsnAspAsp

     *          *          *          *          *

TyrGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp

          *       200          *          *

AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu

     *          *          *          *          *

PheGluThrSerIleLysProCysValLysLeuThrProLeuCys

          *          *       300          *

ValAlaMetLysCysSerSerThrGluSerSerThrGlyAsnAsn

     *          *          *          *          *

ThrThrSerLysSerThrSerThrThrThrThrThrProThrAsp

          *          *          *       400

GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsp

     *          *          *          *          *

AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe

          *          *          *          *

AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu
```

500 * * * *

ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr

* 600 * * *

ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg

* * * *

TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr

* * 700 * *

AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer

ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly

* * * 800 *

PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis

* * * *

GlyArgAspAsnArgThrIleIleSerLeuAsnLysTyrTyrAsn

* * * * 900

LeuSerLeuHisCysLysArgProGlyAsnLysThrValLysGln

* * * *

IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro

* * * * *

IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys

1000 * * *

TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro

* * * * *

ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla

* 1100 * *

ProGlyLysGlySerAspProGluValAlaTyrMetTrpThrAsn

* * * * *

CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn

* * 1200 *

TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle

* * * * *

LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr

* * * 1300

LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr

```
     *          *          *          *          *
 SerIleIleAlaAsnIleAspTrpGlnAsnAsrAsnGlnThrAsn
          *          *          *          *
 IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu
  1400          *          *          *          *
 GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro
 ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg
     *       1500          *          *          *
 GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly
          *          *          *          *
 SerAlaMetGlyAlaArgAlaSerLeuThrValSerAlaGlnSer
     *          *       1600          *          *
 ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu
          *          *          *          *
 AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp
     *          *          *       1700          *
 GlyThrLysAsnLeuGlnAlaArgValThrAlaIleGluLysTyr
                     *          *          *
 LeuGlnAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg
     *          *          *          *       1800
 GlnValCysHisThrThrValProTrpValAsnAspSerLeuAla
          *          *          *          *
 ProAspTrpAspAsnMetThrTrpGlnGluTrpGluLysGlnVal
     *          *          *          *          *
 ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGlnAlaGln
       1900          *          *          *
 IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer
     *          *          *          *          *
 TrpAspIlePheGlyAsnAspPheAspLeuThrSerTrpValLys
          *       2000          *          *
 TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu
     *          *          *          *          *
 ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys
```

```
          *          *       2100          *
GlyTyrArgProValPheSerSerProProGlyTyrIleGlnGln
IleHisIleHisLysAspArgGlyGlnProAlaAsnGluGluThr
          *          *          *       2200
GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp
     *          *          *          *          *
ProIleAlaTyrIleHisPheLeuIleArgGlnLeuLeuArgLeu
          *          *          *          *
LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer
 2300          *          *          *          *
PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu
          *          *          *          *
ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGluTrpIleGln
            2400          *          *          *
GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla
          *          *          *          *
GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleClyArg
     *          *       2500          *          *
GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGlnIle
          *          *          *          *
AlaLeuLeu.star..star..star.GlyThrAlaValSerAlaGlyArgLeuTyrGlu
     *          *          *       2600          *
TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal
          *
GlnAlaThrLysTyrGly
```

35. The nucleic acid of anyone of claims 28 to 34 which is formed a recombinant nucleic acid comprising a nucleic acid from a vector and in which said cDNA or part of said cDNA is inserted.

36. The recombinant nucleic acid of claim 35 which is labelled.

37. A process for the detection of HIV-2 retrovirus or of its RNA in a biological liquid or tissue, particularly for the in vitro diagnosis in man of the potentiality or existence of LAS or of AIDS, which comprises contacting nucleic acids contained in said biological liquid or tissue with a probe containing a nucleic acid according to anyone of claims 28 to 36 under stringent hybridization conditions for the time necessary for said hybridization to occur, washing the hybride formed with a solution ensuring the preservation of said stringent conditions, and detecting the hybride formed.

38. A process for the production of HIV-2 retrovirus which comprises culturing human T4 lymphocytes or permanent cell lines derived from said T4 lymphocytes and carrying the T4 phenotype, which lymphocytes or cell lines had previously been infected with an isolate of IV-2 virus and, particularly when the level of reverse transcriptase activity has reached a determined threhold, recovering and purifying the amounts of virus released in the culture medium of said lymphocytes or cell lines, particularly by differential centrifugation in a gradient of sucrose or metrizamide.

39. A process for the production of specific ntigen of HIV-2 retrovirus which comprises lysing, particularly by means of detergent such as SDS (for instane 0.1% SDS in a RIPA buffer) and recovering the lysate containing said antigens;

40. Process for the production of one of the above defined proteins (**p12**, p16 or p26) or of a protein having the structure of gp140 or of determined parts of said proteins, which process comprises inserting the corresponding nucleic acid sequence in a vector capable of transforming an appropriate host, enabling the expression of an insert containing in said vector, transforming said host by said vector which comprises the said nucleotidic sequence, culturing the transformed cell lines host, recovering and purifying the expressed protein.

41. Process for the production of a hybridization probe for the detection of the RNA of HIV-2 retrovirus which comprises a DNA sequence, particularly according to anyone of claims 27 to 35, in a cloning vector by in vitro recombination, cloning the modified vector obtained in a competent cellular host, and recovering the DNA-recombinants obtained.

L3 ANSWER 4 OF 10 USPATFULL on STN
2000:43925 In vitro diagnostic assay employing HIV-2 antigens for the detection of HIV-2 specific antibodies.
Alizon, Marc, Paris, France
Montagnier, Luc, Le Plessis Robinson, France
Geutard, Denise, Paris, France
Clavel, Francois, Rockville, MD, United States
Sonigo, Pierre, Paris, France
Guyader, Mireille, Paris, France
Institut Pasteur, Paris, France (non-U.S. corporation)
US 6048685 20000411
APPLICATION: US 1995-466706 19950606 (8)
PRIORITY: FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The molecular cloning and characterization of a novel human immunodeficiency virus type 2 (HIV-2), designated HIV-2_{ROD}, is described. A recombinant λ phage genomic library was screened with an HIV-2-specific probe to identify overlapping subgenomic clones. Fragments of these λ phage clones were subcloned into a suitable vector to reconstitute the complete HIV-2_{ROD} genome. The complete nucleotide sequence of this proviral clone was ascertained and the following genes and gene products identified: gag (including p16, p26, and p12), pol, vif, vpr, vpx, env, tat, rev, and nef. These gene products will be useful, inter alia, in in vitro diagnostic methods and kits for the detection of HIV-2-specific antisera.
CLM What is claimed is:
1. An in vitro diagnostic method for detecting human immunodeficiency virus type 2 (HIV-2)-specific antisera comprising the following steps: (a) contacting a biological sample with one or more purified HIV-2 polypeptides selected from the group consisting of p16, p26, **p12**, Pol,

Vif, Vpr, Vpx, Env, Tat, Rev, and Nef; (b) allowing said polypeptide to form an immune complex with HIV-2-specific antisera present in said sample; and, (c) detecting the formation of said immune complex.

2. The method of claim 1 wherein said immune complex is detected by a process selected from the group consisting of radioimmunoassay (RIA), radioimmunoprecipitation assay (RIPA), immunofluorescence assay (IFA), enzyme-linked immunosorbent assay (ELISA), and Western blot.

3. An in vitro diagnostic kit for detecting human immunodeficiency virus type 2 (HIV-2)-specific antisera comprising the following components: (a) one or more purified HIV-2 polypeptides selected from the group consisting of p16, p26, **p12**, Pol, Vif, Vpr, Vpx, Env, Tat, Rev, and Nef; (b) reagents for detecting the formation of an immune complex between said polypeptide and HIV-2-specific antisera present in a biological sample; and (c) a biological reference sample lacking **antibodies** that are recognized by said polypeptide.

L3 ANSWER 5 OF 10 USPATFULL on STN
2000:31239 Methods for the preparation of human immunodeficiency virus type 2 (HIV-2) and antigens encoped thereby.
Montagnier, Luc, Le Plessis Robinson, France
Chamaret, Solange, Paris, France
Guetard, Denise, Paris, France
Alizon, Marc, Paris, France
Clavel, Fran.cedilla.ois, Paris, France
Guyader, Mireille, Paris, France
Sonigo, Pierre, Paris, France
Brun-Vezinet, Fran.cedilla.oise, Paris, France
Rey, Marianne, Paris, France
Rouzioux, Christine, Paris, France
Katlama, Christine, Paris, France
Institut Pasteur, France (non-U.S. corporation)
US 6037165 20000314
APPLICATION: US 1995-470487 19950606 (8)
PRIORITY: FR 1986-911 19860122
FR 1986-910 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
WO 1987-FR25 19870122
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods for producing the newly discovered HIV-2 retrovirus and its antigens are provided. The antigens are obtained from various HIV-2 retroviruses. The antigen compositions comprise a lysate of an HIV-2 retrovirus, a protein of an HIV-2 retrovirus, or a glycoprotein of an HIV-2 retrovirus. Specifically, the antigen composition can comprise p12, p16, p26, gp32, gp42, and gp140.
CLM What is claimed is:
1. A method of producing HIV-2 retrovirus, wherein said method comprises culturing human CD4 lymphocytes in a culture medium, wherein said human CD4 lymphocytes have been infected with said HIV-2 retrovirus.

2. The method of claim 1, wherein, after said culturing step, said HIV-2 retrovirus is purified by recovering the supernatant of said culture medium.

3. The method of claim 2, wherein said virus is purified by differential centrifugation.

4. The method of claim 3, wherein said differential centrifugation occurs in a sucrose or metrizamide gradient.

5. The method of claim 2, wherein said recovering step occurs after the reverse transcriptase activity in said supernatant reaches 100,000 cpm/10^6 T lymphocytes.

6. A method of producing HIV-2 retrovirus, wherein said method comprises culturing immortalized human lymphocytes in a culture medium, wherein said lymphocytes bear CD4 receptors, and wherein said human CD4 lymphocytes have been infected with said HIV-2 retrovirus.

7. The method of claim 6, wherein, after said culturing step, said HIV-2 retrovirus is purified by recovering the supernatant of said culture medium.

8. The method of claim 7, wherein said virus is purified by differential centrifugation.

9. The method of claim 8, wherein said differential centrifugation occurs in a sucrose or metrizamide gradient.

10. The method of claim 7, wherein said recovering step occurs after the reverse transcriptase activity in said supernatant reaches 100,000 cpm/10^6 T lymphocytes.

11. A method for producing an HIV-2 retrovirus antigen, wherein said process comprises: a) lysing HIV-2 retrovirus with a detergent; b) recovering the resulting lysate; and c) isolating said antigen from said lysate, wherein said antigen is recognized by **antibodies** to HIV-2 and is not recognized by **antibodies** to HIV-1.

12. The method of claim 11, wherein said detergent comprises SDS.

13. The method of claim 12, wherein said detergent comprises 0.1% SDS in an RIPA buffer.

14. An immunogenic composition, comprising: a) a protein or glycoprotein of HIV-2 retrovirus; and b) a pharmaceutically acceptable vehicle.

15. The immunogenic composition of claim 14, wherein said protein or glycoprotein is selected from the group consisting of **p12**, p16, p26, gp36, and gp42.

16. The immunogenic composition of claim 15, wherein said **p12** comprises the following amino acid sequence: Arg Lys Ala Phe Lys Cys Trp Asn Cys Gly Lys Glu

- Gly His Ser Ala Arg Gln Cys Arg Ala Pro Arg Arg
- Gln Gly Cys Trp Lys Cys Gly Lys Pro Gly His Ile
- Met Thr Asn Cys Pro Asp Arg Gln Ala Gly Phe Leu
- Gly Leu Gly Pro Trp Gly Lys Lys Pro Arg Asn Phe
- Pro Val Ala Gln Val Pro Gln Gly Leu Thr Pro Thr
- Ala Pro Pro Val Asp Pro Ala Val Asp Leu Leu Glu
- Lys Tyr Met Gln Gln Gly Lys Arg Gln Arg Glu Gln
- Arg Glu Arg Pro Tyr Lys Glu Val Thr Glu Asp Leu
- Leu His Leu Glu Gln Gly Glu Thr Pro Tyr Arg Glu
- Pro Pro Thr Glu Asp Leu Leu His Leu Asn Ser Leu
- Phe Gly Lys Asp Gln.

17. The immunogenic composition of claim 15, wherein said p16 comprises the following amino acid sequence: Met Gly Ala Arg Asn Ser Val Leu Arg Gly Lys Lys

- Ala Asp Glu Leu Glu Arg Ile Arg Leu Arg Pro Gly
- Gly Lys Lys Lys Tyr Arg Leu Lys His Ile Val Trp
- Ala Ala Asn Lys Leu Asp Arg Phe Gly Leu Ala Glu
- Ser Leu Leu Glu Ser Lys Glu Gly Cys Gln Lys Ile
- Leu Thr Val Leu Asp Pro Met Val Pro Thr Gly Ser
- Glu Asn Leu Lys Ser Leu Phe Asn Thr Val Cys Val

- Ile Trp Cys Ile His Ala Glu Glu Lys Val Lys Asp
- Thr Glu Gly Ala Lys Gln Ile Val Arg Arg His Leu
- Val Ala Glu Thr Gly Thr Ala Glu Lys Met Pro Ser
- Thr Ser Arg Pro Thr Ala Pro Ser Ser Glu Lys Gly
- Gly Asn Tyr.

18. The immunogenic composition of claim 15, wherein said p26 comprises the following amino acid sequence: Pro Val Gln His Val Gly Gly Asn Tyr Thr His Ile

- Pro Leu Ser Pro Arg Thr Leu Asn Ala Trp Val Lys
- Leu Val Glu Glu Lys Lys Phe Gly Ala Glu Val Val
- Pro Gly Phe Gln Ala Leu Ser Glu Gly Cys Thr Pro
- Tyr Asp Ile Asn Gln Met Leu Asn Cys Val Gly Asp
- His Gln Ala Ala Met Gln Ile Ile Arg Glu Ile Ile
- Asn Glu Glu Ala Ala Glu Trp Asp Val Gln His Pro
- Ile Pro Gly Pro Leu Pro Ala Gly Gln Leu Arg Glu
- Pro Arg Gly Ser Asp Ile Ala Gly Thr Thr Ser Thr
- Val Glu Glu Gln Ile Gln Trp Met Phe Arg Pro Gln
- Asn Pro Val Pro Val Gly Asn Ile Tyr Arg Arg Trp
- Ile Gln Ile Gly Leu Gln Lys Cys Val Arg Met Tyr
- Asn Pro Thr Asn Ile Leu Asp Ile Lys Gln Gly Pro
- Lys Glu Pro Phe Gln Ser Tyr Val Asp Arg Phe Tyr
- Lys Ser Leu Arg Ala Glu Gln Thr Asp Pro Ala Val
- Lys Asn Trp Met Thr Gln Thr Leu Leu Val Gln Asn
- Ala Asn Pro Asp Cys Lys Leu Val Leu Lys Gly Leu
- Gly Met Asn Pro Thr Leu Glu Glu Met Leu Thr Ala
- Cys Gln Gly Val Gly Gly Pro Gly Gln Lys Ala Arg
- Leu Met Ala Glu Ala Leu Lys Glu Val Ile Gly Pro
- Ala Pro Ile Pro Phe Ala Ala Ala Gln Gln.

19. The immunogenic composition of claim 15, wherein said **p12** is encoded by the following nucleotide sequence:

```
                                                    1160        1170
1180        1190
        AGAAA GGCATTTAAA TGCTGGAACT GTGGAAAGGA
  -         1200        1210        1220        1230
 AGGGCACTCG GCAAGACAAT GCCGAGCACC TAGAAGGCAG
  -         1240        1250        1260        1270
 CGCTGCTGGA AGTGTGGTAA GCCAGGACAC ATCATGACAA
  -         1280        1290        1300        1310
 ACTGCCCAGA TAGACAGGCA GGTTTTTTAG GACTGGGCCC
  -         1320        1330        1340        1350
 TTGGGGAAAG AAGCCCCGCA ACTTCCCCGT GGCCCAAGTT
  -         1360        1370        1380        1390
 CCGCAGGGGC TGACACCAAC AGCACCCCCA GTGGATCCAG
  -         1400        1410        1420        1430
 CAGTGGATCT ACTGGAGAAA TATATGCAGC AAGGGAAAAG
  -         1440        1450        1460        1470
 ACAGAGAGAG CAGAGAGAGA GACCATACAA GGAAGTGACA
  -         1480        1490        1500        1510
 GAGGACTTAC TGCACCTCGA GCAGGGGGAG ACACCATACA
  -         1520        1530        1540        1550
 GGGAGCCACC AACAGAGGAC TTGCTGCACC TCAATTCTCT
  -         1560
 CTTTGGAAAA GACCAG.
```

20. The immunogenic composition of claim 15, wherein said p16 is encoded by the following nucleotide sequence:

```
                                                    10          20          30
40
  ATGGGCGCGA GAAACTCCGT CTTGAGAGGG AAAAAAGCAG
   -          50          60          70          80
  ATGAATTAGA AAGAATCAGG TTACGGCCCG GCGGAAAGAA
   -          90          100         110         120
  AAAGTACAGG CTAAAACATA TTGTGTGGGC AGCGAATAAA
```

```
 -         130         140         150         160
TTGGACAGAT TCGGATTAGC AGAGAGCCTG TTGGAGTCAA
 -         170         180         190         200
AAGAGGGTTG TCAAAAAATT CTTACAGTTT TAGATCCAAT
 -         210         220         230         240
GGTACCGACA GGTTCAGAAA ATTTAAAAAG TCTTTTTAAT
 -         250         260         270         280
ACTGTCTGCG TCATTTGGTG CATACACGCA GAAGAGAAAG
 -         290         300         310         320
TGAAAGATAC TGAAGGAGCA AAACAAATAG TGCGGAGACA
 -         330         340         350         360
TCTAGTGGCA GAAACAGGAA CTGCAGAGAA AATGCCAAGC
 -         370         380         390         400
ACAAGTAGAC CAACAGCACC ATCTAGCGAG AAGGGAGGAA
  - ATTAC.
```

21. The immunogenic composition of claim 15, wherein said p26 is encoded by the following nucleotide sequence:

```
                                   410         420         430
440
       CCAGT GCAACATGTA GGCGGCAACT ACACCCATAT
  -         450         460         470         480
ACCGCTGAGT CCCCGAACCC TAAATGCCTG GGTAAAATTA
  -         490         500         510         520
GTAGAGGAAA AAAAGTTCGG GGCAGAAGTA GTGCCAGGAT
  -         530         540         550         560
TTCAGGCACT CTCAGAAGGC TGCACGCCCT ATGATATCAA
  -         570         580         590         600
CCAAATGCTT AATTGTGTGG GCGACCATCA AGCAGCCATG
  -         610         620         630         640
CAGATAATCA GGGAGATTAT CAATGAGGAA GCAGCAGAAT
  -         650         660         670         680
GGGATGTGCA ACATCCAATA CCAGGCCCCT TACCAGCGGG
  -         690         700         710         720
GCAGCTTAGA GAGCCAAGGG GATCTGACAT AGCAGGGACA
  -         730         740         750         760
ACAAGCACAG TAGAAGAACA GATCCAGTGG ATGTTTAGGC
  -         770         780         790         800
CACAAAATCC TGTACCAGTA GGAAACATCT ATAGAAGATG
  -         810         820         830         840
GATCCAGATA GGATTGCAGA AGTGTGTCAG GATGTACAAC
  -         850         860         870         880
CCGACCAACA TCCTAGACAT AAAACAGGGA CCAAAGGAGC
  -         890         900         910         920
CGTTCCAAAG CTATGTAGAT AGATTCTACA AAAGCTTGAG
  -         930         940         950         960
GGCAGAACAA ACAGATCCAG CAGTGAAGAA TTGGATGACC
  -         970         980         990        1000
CAAACACTGC TAGTACAAAA TGCCAACCCA GACTGTAAAT
  -        1010        1020        1030        1040
TAGTGCTAAA AGGACTAGGG ATGAACCCTA CCTTAGAAGA
  -        1050        1060        1070        1080
GATGCTGACC GCCTGTCAGG GGGTAGGTGG GCCAGGCCAG
  -        1090        1100        1110        1120
AAAGCTAGAT TAATGGCAGA GGCCCTGAAA GAGGTCATAG
  -        1130        1140        1150
GACCTGCCCC TATCCCATTC GCAGCAGCCC
  - AGCAG.
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22. The immunogenic composition of claim 15, wherein said immunogenic administered in dosages containing from 50 to 100 micrograms of said protein per kilogram of body weight.

L3 ANSWER 6 OF 10 USPATFULL on STN

1999:136934 Competitive assays for determining the effectiveness of a human immunodeficiency virus type 2 (HIV-2) antiviral agent, employing peptides and proteins of HIV-2.
Alizon, Marc, Paris, France
Montagnier, Luc, Le Plessis Robinson, France
Guetard, Denise, Paris, France
Clavel, Francois, Rockville, MD, United States
Sonigo, Pierre, Paris, France
Guyader, Mireille, Toulouse, France
Institut Pasteur, Paris, France (non-U.S. corporation)
US 5976785 19991102
APPLICATION: US 1991-811150 19911220 (7)
PRIORITY: FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for diagnosing an HIV-2 (LAV-II) infection and a kit containing reagents for the same is disclosed. These reagents include cDNA probes which are capable of hybridizing to at least a portion of the genome of HIV-2. In one embodiment, the DNA probes are capable of hybridizing to the entire genome of HIV-2. These reagents also include polypeptides encoded by some of these DNA sequences.

CLM What is claimed is:
1. A method for determining the effectiveness of an agent for inhibiting a Human Immunodeficiency Virus Type 2 (HIV-2) from binding to a target cell, said method comprising: contacting said cell with said agent to be tested in the presence and in the absence of a labeled peptide having immunological properties of a first portion of the envelope glycoprotein of an HIV-2 virus, wherein said peptide comprises no more than about 40 amino acid residues, said first portion of the envelope glycoprotein is antigenic or is capable of eliciting the production of **antibodies** directed to the peptide, and said envelope glycoprotein comprises an amino acid sequence as follows: MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys

```
                                  10
- LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro
-             20                                  30
- ThrTrpLysAsnAlaThrIleProLeuPheCysAlaThrArgAsn
-                                  40
- ArgAspThrTrpGlyThrIleGlnCysLeuProAspAsnAspAsp
-             50                                  60
- TryGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp
-                                  70
- AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu
-             80                                  90
- PheGluThrSerIleLysProCysValLysLeuThrProLeuCys
-                                 100
- ValAlaMetLysCysSerSerThrGluSerSerThrGlyAsnAsn
-            110                                 120
- ThrThrSerLysSerThrSerThrThrThrThrThrProThrAsp
-                                 130
- GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsp
-            140                                 150
- AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe
-                                 160
- AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu
-            170                                 180
- ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr
-                                 190
- AsnGlnThrGlnCysTyrMetAsnHisCysAsnThrSerValIle
-            200                                 210
- ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg
-                                 220
```

TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr
230 240
AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer
250
ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly
260 270
PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis
280
GlyArgAspAsnArgThrIleIleSerLeuAsnLysTryTyrAsn
290 300
LeuSerLeuHisCysLysArgProGlyAsnLysThrValLysGln
310
IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro
320 340
IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys
350
TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro
360 370
ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla
380
ProGlyLysGlySerAspProGluValAlaTyrMetTrpThrAsn
390 400
CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn
410
TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle
420 430
LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr
440
LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr
450 460
SerIleIleAlaAsnIleAspTrpGlnAsnAsnAsnGlnThrAsn
470
IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu
480 490
GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro
500
ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg
510 520
GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly
530
SerAlaMetGlyAlaArgAlaSerLeuThrValSerAlaGlnSer
540 550
ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu
560
AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp
570 580
GlyThrLysAsnLeuGlnAlaArgValThrAlaIleGluLysTyr
590
LeuGluAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg
600 610
GlnValCysHisThrThrValProTrpValAsnAspSerLeuAla
620
ProAspTrpAspAsnMetThrTrpGlnGluTrpGluLysGlnVal
630 640
ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGluAlaGln
650
IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer
660 670
TrpAspIlePheGlyAsnTrpPheAspLeuThrSerTrpValLys
680
TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu
690 700
ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys
710
GlyTyrArgProValPheSerSerProProGlyTyrIleGln***
720 730

- IleHisIleHisLysAspArgGlyGlnProAlaAsnGluGluThr
- 740
- GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp
- 750 760
- ProIleAlaTyrIleHisPheLeuIleArgGlnLeuIleArgLeu
- 770
- LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer
- 780 790
- PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu
- 800
- ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGluTrpIleGln
- 810 820
- GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla
- 830
- GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleGlyArg
- 840 850
- GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGluIle
- 850
- AlaLeuLeu***GlyThrAlaValSerAlaGlyArgLeuTyrGlu
- 860 870
- TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal
- 880
- GlnAlaThrLysTyrGly;
- 890

determining the amount of labeled peptide bound in the presence of said agent; determining the amount of labeled peptide bound in the absence of said agent; and determining the relative amount of labeled peptide-cell binding in the presence of said agent compared to the amount of labeled peptide-cell binding in the absence of said agent; wherein an agent having a low affinity for binding to the cell is evidenced by little or no change between the binding values of the labeled peptide in the presence and in the absence of the agent, and an agent having a high affinity for binding to the cell is evidenced by a lower binding value in the presence of the agent in comparison to the binding value in the absence of the agent.

2. The method of claim 1, wherein said enveloped glycoprotein is labeled with an immunoassay label selected from the group consisting of enzymes, radioactive isotopes, fluorescent labels, and chromophores.

3. A method for determining the effectiveness of an agent for inhibiting a Human Immunodeficiency Virus Type 2 (HIV-2) from binding to a target cell, said method comprising: contacting said cell with said agent to be tested in the presence of in the absence of one or more labeled peptides selected from the group consisting of: (1) a peptide comprising an amino acid sequence of either of the following formulas: XR--A-E-YL-DQ--L--WGC----CZ, or XA-E-YL-DZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: RVTAIEKYLQDQARLNSWGCAFRQVC, or AIEKYLQDQ; (2) a peptide comprising an amino acid sequence of either of the following formulas: X----E--Q-QQEKN--EL--L---Z, or XQ-QQEKNZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: SKSLEQAQIQQEKNMYELQKLNSW, or QIQQEKN; (3) a peptide comprising an amino acid sequence of either of the following formulas: XEL--YK-V-I-P-G-APTK-KR-----Z, or XYK-V-I-P-G-APTK-KRZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: ELGDYKLVEITPIGFAPTKEKRYSSAH, or YKLVEITPIGFAPTKEK; (4) the antigenic peptide gag1 comprising an amino acid sequence of the following formula: XNCKLVLKGLGMNPTLEEMLTAZ, wherein X and Z or OH or NH2, and wherein each of the hyphens corresponds to an

aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: XNCKLVLKGLGMNPTLEEMLTA; (5) a peptide comprising an amino acid sequence of either of the following formulas: X----VTV-YGVP-WK-AT--LFCA-Z, or XVTV-YGVP-WK-ATZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: CTQYVTVFYGVPTWKNATIPLFCAT, or VTVFYGVPTWKNAT; (6) a peptide comprising an amino acid sequence of either of the following formulas: X-G-DPE------NC-GEF-YCN-----NZ, or XNC-GEF-YCNZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: KGSDPEVAYMWTNCRGEFLYCNMTWFLN, or NCRGEFLYCN; (7) a peptide comprising an amino acid sequence of either of the following formulas: X-----C-IKQ-I------G---YZ, or XC-IKQ-IZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: RNYAPCHIKQIINTWHKVGRNVY, or CHIKQII; (8) a peptide comprising an amino acid sequence of either of the following formulas: X---QE--LNVTE-F--W-NZ, or XLNVTE-FZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: DDYQEITLNVTEAFDAWNN; (9) a peptide comprising an amino acid sequence of either of the following formulas: XL---S-KPCVKLTPLCV--KZ, or XKPCVKLTPLCVZ, or XS-KPCVKLTPLCVZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: ETSIKPCVKLTPLCVAMK; (10) a peptide comprising an amino acid sequence of either of the following formulas: X---N-S-IT--C-Z, or XN-S-ITZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: NHCNTSVITESCD; (11) a peptide comprising an amino acid sequence having the following formula: XYC-P-G-A-L-CN-TZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: YCAPPGYALLRCNDT; and (12) a peptide comprising an amino acid sequence of either of the following formulas: X------A-C-----W--Z, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: NKRPRQAWCWFKGKWKD; wherein said immunological properties comprise the ability of said peptide sequences to specifically recognize **antibodies** against HIV-2; determining the amount of labeled peptide bound in the presence of said agent; determining the amount of labeled peptide bound in the absence of said agent; and determining the relative amount of labeled peptide-cell binding in the presence of said agent compared to the amount of labeled peptide-cell binding in the absence of said agent; wherein an agent having a low affinity for binding to the cell is evidenced by little or no change between the binding values of the labeled peptide in the presence and in the absence of the agent, and an agent having a high affinity for binding to the cell is evidenced by a lower binding value in the presence of the agent in comparison to the binding value in the agent in comparison to the binding value in the absence of the agent.

4. The method of claim 3, wherein said one or more peptides are labeled with an immunoassay label selected from the group consisting of enzymes,

radioactive isotopes, fluorescent labels, and chromophores.

5. A kit for determining the effectiveness of an agent for inhibiting a Human Immunodeficiency Virus Type 2 (HIV-2) from binding to a target cell, said kit comprising: a labeled peptide having immunological properties of a first portion of the envelope glycoprotein of a HIV-2 virus, wherein said peptide comprises no more than about 40 amino acid residues, said first portion of the envelope glycoprotein is antigenic or is capable of eliciting the production of **antibodies** directed to the peptide, and said envelope glycoprotein comprises an amino acid sequence as follows: MetMetAsnGlnLeuLeuIleAlaIleLeuLeuAlaSerAlaCys

10

- LeuValTyrCysThrGlnTyrValThrValPheTyrGlyValPro

20 30

- ThrTrpLysAsnAlaThrIleProLeuPheCysAlaThrArgAsn

40

- ArgAspThrTrpGlyThrIleGlnCysLeuProAspAsnAspAsp

50 60

- TryGlnGluIleThrLeuAsnValThrGluAlaPheAspAlaTrp

70

- AsnAsnThrValThrGluGlnAlaIleGluAspValTrpHisLeu

80 90

- PheGluThrSerIleLysProCysValLysLeuThrProLeuCys

100

- ValAlaMetLysCysSerSerThrGluSerSerThrGlyAsnAsn

110 120

- ThrThrSerLysSerThrSerThrThrThrThrThrProThrAsp

130

- GlnGluGlnGluIleSerGluAspThrProCysAlaArgAlaAsp

140 150

- AsnCysSerGlyLeuGlyGluGluGluThrIleAsnCysGlnPhe

160

- AsnMetThrGlyLeuGluArgAspLysLysLysGlnTyrAsnGlu

170 180

- ThrTrpTyrSerLysAspValValCysGluThrAsnAsnSerThr

190

- AsnGlnThrGlnCysTyrMetAsnHisCysAsnThrSerValIle

200 210

- ThrGluSerCysAspLysHisTyrTrpAspAlaIleArgPheArg

220

- TyrCysAlaProProGlyTyrAlaLeuLeuArgCysAsnAspThr

230 240

- AsnTyrSerGlyPheAlaProAsnCysSerLysValValAlaSer

250

- ThrCysThrArgMetMetGluThrGlnThrSerThrTrpPheGly

260 270

- PheAsnGlyThrArgAlaGluAsnArgThrTyrIleTyrTrpHis

280

- GlyArgAspAsnArgThrIleIleSerLeuAsnLysTryTyrAsn

290 300

- LeuSerLeuHisCysLysArgProGlyAsnLysThrValLysGln

310

- IleMetLeuMetSerGlyHisValPheHisSerHisTyrGlnPro

320 340

- IleAsnLysArgProArgGlnAlaTrpCysTrpPheLysGlyLys

350

- TrpLysAspAlaMetGlnGluValLysThrLeuAlaLysHisPro

360 370

- ArgTyrArgGlyThrAsnAspThrArgAsnIleSerPheAlaAla

380

- ProGlyLysGlySerAspProGluValAlaTyrMetTrpThrAsn

390 400

- CysArgGlyGluPheLeuTyrCysAsnMetThrTrpPheLeuAsn

410

- TrpIleGluAsnLysThrHisArgAsnTyrAlaProCysHisIle

420 430

- LysGlnIleIleAsnThrTrpHisLysValGlyArgAsnValTyr
440
- LeuProProArgGluGlyGluLeuSerCysAsnSerThrValThr
450 460
- SerIleIleAlaAsnIleAspTrpGlnAsnAsnAsnGlnThrAsn
470
- IleThrPheSerAlaGluValAlaGluLeuTyrArgLeuGluLeu
480 490
- GlyAspTyrLysLeuValGluIleThrProIleGlyPheAlaPro
500
- ThrLysGluLysArgTyrSerSerAlaHisGlyArgHisThrArg
510 520
- GlyValPheValLeuGlyPheLeuGlyPheLeuAlaThrAlaGly
530
- SerAlaMetGlyAlaArgAlaSerLeuThrValSerAlaGlnSer
540 550
- ArgThrLeuLeuAlaGlyIleValGlnGlnGlnGlnGlnLeuLeu
560
- AspValValLysArgGlnGlnGluLeuLeuArgLeuThrValTrp
570 580
- GlyThrLysAsnLeuGlnAlaArgValThrAlaIleGluLysTyr
590
- LeuGluAspGlnAlaArgLeuAsnSerTrpGlyCysAlaPheArg
600 610
- GlnValCysHisThrThrValProTrpValAsnAspSerLeuAla
620
- ProAspTrpAspAsnMetThrTrpGlnGluTrpGluLysGlnVal
630 640
- ArgTyrLeuGluAlaAsnIleSerLysSerLeuGluGluAlaGln
650
- IleGlnGlnGluLysAsnMetTyrGluLeuGlnLysLeuAsnSer
660 670
- TrpAspIlePheGlyAsnTrpPheAspLeuThrSerTrpValLys
680
- TyrIleGlnTyrGlyValLeuIleIleValAlaValIleAlaLeu
690 700
- ArgIleValIleTyrValValGlnMetLeuSerArgLeuArgLys
710
- GlyTyrArgProValPheSerSerProProGlyTyrIleGln***
720 730
- IleHisIleHisLysAspArgGlyGlnProAlaAsnGluGluThr
740
- GluGluAspGlyGlySerAsnGlyGlyAspArgTyrTrpProTrp
750 760
- ProIleAlaTyrIleHisPheLeuIleArgGlnLeuIleArgLeu
770
- LeuThrArgLeuTyrSerIleCysArgAspLeuLeuSerArgSer
780 790
- PheLeuThrLeuGlnLeuIleTyrGlnAsnLeuArgAspTrpLeu
800
- ArgLeuArgThrAlaPheLeuGlnTyrGlyCysGluTrpIleGln
810 820
- GluAlaPheGlnAlaAlaAlaArgAlaThrArgGluThrLeuAla
830
- GlyAlaCysArgGlyLeuTrpArgValLeuGluArgIleGlyArg
840 850
- GlyIleLeuAlaValProArgArgIleArgGlnGlyAlaGluIle
850
- AlaLeuLeu***GlyThrAlaValSerAlaGlyArgLeuTyrGlu
860 870
- TyrSerMetGluGlyProSerSerArgLysGlyGluLysPheVal
880
- GlnAlaThrLysTyrGly;
890

a composition comprising a target cell; and a control composition comprising said labeled peptide and said cell; wherein the relative

affinity of the agent for binding to the cell is determined by comparing the amount of labeled peptide bound in the presence of the agent with the amount of labeled peptide bound in the absence of said agent.

6. The kit of claim 5, wherein said enveloper glycoprotein is labeled with an immunoassay label selected from the group consisting of enzymes, radioactive isotopes, fluorescent labels, and chromophores.

7. A kit for determining the effectiveness of an agent for inhibiting a Human Immunodeficiency Virus Type 2 (HIV-2) from binding to a target cell, said kit comprising: one or more labeled peptides selected from the group consisting of: (1) a peptide comprising an amino acid sequence of either of the following formulas: XR--A-E-YL-DQ--L--WGC-----CZ, or XA-E-YL-DZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: RVTAIEKYLQDQARLNSWGCAFRQVC, or AIEKYLQDQ; (2) a peptide comprising an amino acid sequence of either of the following formulas: X ----E--Q-QQEKN--EL--L---Z, or XQ-QQEKNZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: SKSLEQAQIQQEKNMYELQKLNSW, or QIQQEKN; (3) a peptide comprising an amino acid sequence of either of the following formulas: XEL--YK-V-I-P-G-APTK-KR-----Z, or XYK-V-I-P-G-APTK-KRZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: ELGDYKLVEITPIGFAPTKEKRYSSAH, or YKLVEITPIGFAPTKEK; (4) the antigenic peptide gagl comprising an amino acid sequence of the following formula: XNCKLVLKGLGMNPTLEEMLTAZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: XNCKLVLKGLGMNPTLEEMLTA; (5) a peptide comprising an amino acid sequence of either of the following formulas: X----VTV-YGVP-WK-AT--LFCA-Z, or XVTV-YGVP-WK-ATZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: CTQYVTVFYGVPTWKNATIPLFCAT, or VTVFYGVPTWKNAT; (6) a peptide comprising an amino acid sequence of either of the following formulas: X-G-DPE------NC-GEF-YCN-----NZ, or XNC-GEF-YCNZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: KGSDPEVAYMWTNCRGEFLYCNMTWFLN, or NCRGEFLYCN; (7) a peptide comprising an amino acid sequence of either of the following formulas: X-----C-IKQ-I------G---YZ, or XC-IKQ-IZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of either of the following peptide sequences: RNYAPCHIKQIINTWHKVGRNVY, or CHIKQII; (8) a peptide comprising an amino acid sequence of either of the following formulas: X---QE--LNVTE-F--W-NZ, or XLNVTE-FZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: DDYQEITLNVTEAFDAWNN; (9) a peptide comprising an amino acid sequence of either of the following formulas: XL---S-KPCVKLTPLCV--KZ, or XKPCVKLTPLCVZ, or XS-KPCVKLTPLCVZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide

sequence: ETSIKPCVKLTPLCVAMK; (10) a peptide comprising an amino acid sequence of either of the following formulas: X---N-S-IT--C-Z, or XN-S-ITZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: NHCNTSVITESCD; (11) a peptide comprising an amino acid sequence having the following formula: XYC-P-G-A-L-CN-TZ, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: YCAPPGYALLRCNDT; and (12) a peptide comprising an amino acid sequence of either of the following formulas: X------A-C-----W--Z, wherein X and Z are OH or NH_2, and wherein each of the hyphens corresponds to an aminoacyl residue selected from the group consisting of those which permit the conservation of the immunological properties of the following peptide sequence: NKRPRQAWCWFKGKWKD; wherein said immunological properties comprise the ability of said peptide sequences to specifically recognize **antibodies** against HIV-2; a composition comprising a target cell; and a control composition comprising said one or more labeled peptides and said cell; wherein the relative affinity of the agent for binding to the cell is determined by comparing the amount of labeled peptide bound in the presence of the agent with the amount of labeled peptide bound in the absence of said agent.

8. The kit of claim 7, wherein said one or more peptide are labeled with an immunoassay label selected from the group consisting of enzymes, radioactive isotopes, fluorescent labels, and chromophores.

9. A method for determining the effectiveness of an agent for inhibiting a Human Immunodeficiency Virus Type 2 (HIV-2) from binding to a target cell, said method comprising: contacting said cell with said agent to be tested in the presence and in the absence of one or more labeled polypeptide expression products of HIV-2 selected from the group consisting of p16, p26, **p12**, polymerase, Q protein, R protein, X protein, env protein, F protein, TAT, ART, U5, and U3; determining the amount of labeled polypeptide expression product bound in the presence of said agent; determining the amount of labeled polypeptide expression product bound in the absence of said agent; and determining the relative amount of labeled polypeptide expression product-cell binding in the presence of said agent compared to the amount of labeled polypeptide expression product-cell binding in the absence of said agent; wherein an agent having a low affinity for binding to the cell is evidenced by little or no change between the binding values of the labeled polypeptide expression product in the presence and in the absence of the agent, and an agent having a high affinity for binding to the cell is evidenced by a lower binding value in the presence of the agent in comparison to the binding value in the absence of the agent.

10. The method of claim 9, wherein said env protein is labeled with an immunoassay label selected from the group consisting of enzymes, radioactive isotopes, fluorescent labels, and chromophores.

11. A kit for determining the effectiveness of an agent for inhibiting a Human Immunodeficiency Virus Type 2 (HIV-2) from binding to a target cell, said kit comprising: one or more labeled polypeptide expression products of HIV-2 selected from the group consisting of p16, p26, **p12**, polymerase, Q protein, R protein, X protein, env protein, F protein, TAT, ART, U5, and U3; a composition comprising a target cell; and a control composition comprising said one or more labeled polypeptide expression products and said cell; wherein the relative affinity of the agent for binding to the cell is determined by comparing the amount of labeled polypeptide expression product bound in the presence of the agent with the amount of labeled polypeptide expression product bound in the absence of said agent.

12. The kit of claim 11, wherein said env protein is labeled with an immunoassay label selected from the group consisting of enzymes, radioactive isotopes, fluorescent labels, and chromophores.

L3 ANSWER 7 OF 10 USPATFULL on STN
1998:134797 In vitro diagnostic assays for the detection of HIV-1 or HIV-2 employing viral-specific antigens and antibodies.
Montagnier, Luc, Le Plessis Robinson, France
Guetard, Denise, Paris, France
Alizon, Marc, Paris, France
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Institut Pasteur, Paris, France (non-U.S. corporation)
US 5830641 19981103
APPLICATION: US 1994-214299 19940317 (8)
PRIORITY: FR 1986-910 19860122
FR 1986-911 19860122
FR 1986-1635 19360206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a new class of retroviruses, designated by HIV-2, of which samples have been deposited to the ECACC under numbers 87.01.1001 and 87.01.1002 and to the NCIB under numbers 12.398 and 12.399.

It relates also to antigens capable to be obtained from this virus, particularly proteins p12, p16, p26 and gp140. These various antigens can be used for the diagnosis of the disease, especially by contacting these antigens with a serum of a patient submitted to the diagnosis.

It relates to immunogenic compositions containing more particularly the glycoprotein gp140. Finally it concerns nucleotidic sequences, which can be used especially as hybridization probes, derived from the RNA of HIV-2.
CLM What is claimed is:
1. An in vitro diagnostic assay for the detection of **antibodies** specific for human immunodeficiency virus type 1 (HIV-1), type 2 (HIV-2), or both types 1 and 2 in a biological sample, comprising: (a) contacting the biological sample with one or more HIV-2 peptides selected from the group consisting of: (1) a peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR2## (2) a peptide encoded by the HIV-2 env gene, wherein said peptide comprises the following sequence: ##STR3## (3) a p16 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR4## (4) a p26 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR5## (5) a **p12** peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR6## (b) contacting said biological sample with one or more HIV-1 peptides; and (c) detecting the formation of antigen-**antibody** complexes between said one or more peptides and **antibodies** present in said biological sample.

2. The assay of claim 1, wherein said sample is also contacted with one or more proteins selected from the group consisting of external env glycoprotein of HIV-2 and transmembrane env protein of HIV-2.

3. The assay of claim 1, wherein said one or more peptides of HIV-1 is selected from the group consisting of p25, p18, gp110, and gp41 of HIV-1.

4. The assay according to any one of claims 1, 2, or 3, wherein the

formation of antigen-**antibody** complex is detected by employing a process selected from the group consisting of radioimmunoassay, radioimmunoprecipitation assay, immunofluorescence assay, enzyme-linked immunosorbent assay, and Western blot.

5. The assay according to claim 4, wherein said peptide or protein is labeled with a label selected from the group consisting of an enzyme label, a fluorescent label, and a radioactive label.

6. An in vitro diagnostic kit for the detection of **antibodies** specific for human immunodeficiency virus type 1 (HIV-1), type 2, or both type 1 and 2 in a biological sample, comprising: (a) a peptide composition comprising one or more HIV-2 peptides selected from the group consisting of: (1) a peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR7## (2) a peptide encoded by the HIV-2 env gene, wherein said peptide comprises the following sequence: ##STR8## (3) a p16 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR9## (4) a p26 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR10## (5) a **p12** peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR11## (b) a peptide composition comprising one or more HIV-1 peptides; and (c) reagents for the detection of antigen-**antibody** complex formation between said one or more peptides and **antibodies** present in said biological sample.

7. The kit of claim 6, further comprising a peptide composition having one or more peptides selected from the group consisting of external env glycoprotein of HIV-2 and transmembrane env protein of HIV-2.

8. The kit of claim 6, wherein said one or more peptides of HIV-1 is selected from the group consisting of p25, p18, gp110, and gp41 of HIV-1.

9. The kit according to any one of claims 6, 7, or 8, wherein said peptide or protein is labeled with a label selected from the group consisting of an enzyme label, a fluorescent label, and a radioactive label.

10. An in vitro diagnostic assay for the detection of antigens of human immunodeficiency virus type 1, type 2, or both types 1 and 2 in a biological sample, comprising: (a) contacting the biological sample with one or more **antibodies** against an HIV-2 peptide selected from the group consisting of: (1) an **antibody** specific for a peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR12## (2) an **antibody** specific for a peptide encoded by the HIV-2 env gene, wherein said peptide comprises the following sequence: ##STR13## (3) an **antibody** specific for a p16 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR14## (4) an **antibody** specific for a p26 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR15## (5) an **antibody** specific for a **p12** peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR16## (b) contacting said biological sample with one or more **antibodies** specific for an HIV-1 peptide; and (c) detecting the formation of antigen-**antibody** complexes between said one or more **antibodies** and antigens present in said biological sample.

11. The assay of claim 10, wherein said sample is also contacted with one or more **antibodies** selected from the group consisting of **antibody** specific for the external HIV-2 env glycoprotein and **antibody** specific for the transmembrane HIV-2 env protein.

12. The assay of claim 10, wherein said one or more **antibodies** specific for an HIV-1 peptide are selected from the group consisting of **antibody** specific for HIV-1 p25, **antibody** specific for HIV-1 p18,

antibody specific for HIV-1 gp110, and **antibody** specific for HIV-1 gp41.

13. The assay according to any one of claims 10, 11, and 12, wherein the formation of antigen-**antibody** complex is detected by employing a process selected from the group consisting of radioimmunoassay, radioimmunoprecipitation assay, immunofluorescence assay, enzyme-linked immunosorbent assay, and Western blot.

14. An in vitro diagnostic kit for the detection of antigens of a human immunodeficiency virus type 1, type 2, or both types 1 and 2 in a biological sample, comprising: (a) an **antibody** composition comprising one or more **antibodies** specific for an HIV-2 peptide selected from the group consisting of: (1) an **antibody** specific for a peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR17## (2) an **antibody** specific for a peptide encoded by the HIV-2 env gene, wherein said peptide comprises the following sequence: ##STR18## (3) an **antibody** specific for a p16 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR19## (4) an **antibody** specific for a p26 peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR20## (5) an **antibody** specific for a **p12** peptide encoded by the HIV-2 gag gene, wherein said peptide comprises the following sequence: ##STR21## (b) an **antibody** composition comprising one or more **antibodies** specific for an HIV-1 peptide; and (c) reagents for the detection of antigen-**antibody** complex formation between said one or more **antibodies** and antigens present in said biological sample.

15. The kit of claim 14, further comprising an **antibody** composition having one or more **antibodies** selected from the group consisting of **antibody** specific for the HIV-2 external env glycoprotein and **antibody** specific for the HIV-2 transmembrane env protein.

16. The kit of claim 14, wherein said one or more **antibodies** specific for an HIV-1 peptide are selected from the group consisting of **antibody** specific for HIV-1 p25, **antibody** specific for HIV-1 p18, **antibody** specific for HIV-1 gp110, and **antibody** specific for HIV-1 gp41.

17. The diagnostic assay of any one of claims 1-5, wherein said HIV-2 peptides and proteins are specific for $HIV\text{-}2_{ROD}$ and wherein said HIV-1 peptides are specific for $HIV\text{-}1_{BRU}$.

18. The diagnostic kit of any one of claims 6-9, wherein said HIV-2 peptides and proteins are specific for $HIV\text{-}2_{ROD}$ and wherein said HIV-1 peptides are specific for $HIV\text{-}1_{BRU}$.

19. The diagnostic assay of any one of claims 10-12, wherein said HIV-2 peptides and proteins are specific for $HIV\text{-}2_{ROD}$ and wherein said HIV-1 peptides are specific for $HIV\text{-}1_{BRU}$.

20. The diagnostic assay of any one of claims 14-16, wherein said HIV-2 peptides and proteins are specific for $HIV\text{-}2_{ROD}$ and wherein said HIV-1 peptides are specific for $HIV\text{-}1_{BRU}$.

21. The diagnostic assay of claim 1, wherein said contacting steps occur simultanecusly.

22. The diagnostic assay of claim 6, wherein said contacting steps occur simultaneously.

23. The diagnostic assay of claim 10, wherein said contacting steps occur simultaneously.

24. The diagnostic assay of claim 14, wherein said contacting steps occur simultaneously.

L3 ANSWER 8 OF 10 USPATFULL on STN

96:111330 Peptides of human immunodeficiency virus type 2 (HIV-2) and in vitro diagnostic methods and kits employing the peptides for the detection of HIV-2.

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Montagnier, Luc, Le Plessis Robinson, France
Geutard, Denise, Paris, France
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Institut Pasteur, Paris, France (non-U.S. corporation)

US 5580739 19961203
APPLICATION: US 1994-214221 19940317 (8)
PRIORITY: FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
DOCUMENT TYPE: Utility; Granted.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel lentivirus, designated the human immunodeficiency virus type 2 (HIV-2_{ROD}), was isolated from West African patients with acquired immune deficiency syndrome (AIDS). A recombinant lambda phage library was constructed from HIV-2_{ROD} -infected CEM genomic DNA. Overlapping molecular clones were obtained and the nucleotide sequence of the complete 9.5-kilobase (kb) HIV-2_{ROD} genome ascertained. The genetic organization of HIV-2 is analogous to that of other retroviruses and consists of the 5'LTR-gag-pol-central region-env-nef-3'LTR. The central region also encodes for the regulatory proteins Tat and Rev, as well as the ancillary proteins Vif, Vpr, and Vpx. The proteins encoded by this proviral clone will provide novel immunologic, biochemic, and diagnostic reagents useful for the detection of HIV-2.

CLM What is claimed is:

1. A peptide comprising the gag precursor protein of human immunodeficiency virus type 2 (HIV-2_{ROD--}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR4##

2. A peptide comprising the polymerase precursor protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR5##

3. A peptide comprising the Vif protein of human immunodeficiency virus type 2 (HIV-2_{ROD--}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR6##

4. A peptide comprising the Vpr protein of human immunodeficiency virus type 2 (HIV-2_{ROD--}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR7##

5. A peptide comprising the Vpx protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR8##

6. A peptide comprising the Nef protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR9##

7. A peptide comprising the TAT protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR10##

8. A peptide comprising the Rev protein of human immunodeficiency virus type 2 (HIV-2_{ROD--}), wherein the peptide is free of particles of said virus, having the following amino acid sequence: ##STR11##

9. An in vitro diagnostic method for the detection of the presence or absence of **antibodies** which bind to antigens of a human immunodeficiency virus type 2 (HIV-2) comprising: (a) contacting a biological sample with one or more peptides selected from the group consisting of: (1) a peptide comprising the gag precursor protein of human immunodeficiency virus type 2 (HIV-2_{ROD--}), having the following sequence: ##STR12## (2) a peptide comprising the polymerase precursor protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR13## (3) a peptide comprising the env precursor protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR14## (4) a peptide comprising the Vif protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR15## (5) a peptide comprising the Vpr protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR16## (6) a peptide comprising the Vpx protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR17## (7) a peptide comprising the Nef protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR18## (8) a peptide comprising the TAT protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR19## (9) a peptide comprising the Rev protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR20## (10) a peptide comprising the p16/matrix protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR21## (11) a peptide comprising the p26/capsid protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR22## (12) a peptide comprising the **p12**/nucleocapsid protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR23## (b) detecting the formation of antigen-**antibody** complex between said one or more peptides and **antibodies** present in said biological sample: and (c) providing a biological reference sample lacking **antibodies** recognized by said one or more peptides, wherein the one or more peptides and the biological reference sample are present in an amount sufficient to perform the detection of antigen-**antibody** complex formed between said one or more peptides and **antibodies** present in the biological sample, said detection being indicative of previous exposure to HIV-2.

10. The method of claim 9, wherein the formation of antigen-**antibody** complex is detected by employing a process selected from the group consisting of radioimmunoassay, radioimmunoprecipitation assay, immunofluorescence assay, enzyme-linked immunosorbent assay, and Western blot.

11. An in vitro diagnostic method for the detection of the presence or absence of **antibodies** which bind to antigens of a human immunodeficiency virus type 2 (HIV-2) comprising: (a) contacting a biological sample with a peptide comprising the Nef protein of human immunodeficiency virus type 2 (HIV-2_{ROD}), having the following sequence: ##STR24## (b) detecting the formation of antigen-**antibody** complex between said peptide and **antibodies** present in said biological sample; and (c) providing a biological reference sample lacking **antibodies** recognized by said peptide. wherein the peptide and the biological reference sample are present in an amount sufficient to perform the detection of antigen-**antibody** complex formed between said peptide and **antibodies** present in the biological sample, said detection being indicative of previous exposure to HIV-2.

12. The method of claim 11, wherein the formation of antigen-**antibody**

complex is detected by employing a process selected from the group consisting of radioimmunoassay, radioimmunoprecipitation assay, immunofluorescence assay, enzyme-linked immunosorbent assay, and Western blot.

13. A diagnostic kit for the in vitro detection of the presence or absence of **antibodies** which bind to antigens of a human immunodeficiency virus type 2 (HIV-2) comprising: (a) a peptide composition comprising one or more peptides selected from the group consisting of: (1) a peptide comprising the gag precursor protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR25## (2) a peptide comprising the polymerase precursor protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR26## (3) a peptide comprising the env precursor protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR27## (4) a peptide comprising the Vif protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR28## (5) a peptide comprising the Vpr protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR29## (6) a peptide comprising the Vpx protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR30## (7) a peptide comprising the Nef protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR31## (8) a peptide comprising the TAT protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR32## (9) a peptide comprising the Rev protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR33## (10) a peptide comprising the p16/matrix protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR34## (11) a peptide comprising the p26/capsid protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR35## (12) a peptide comprising the **p12**/nucleocapsid protein of human immunodeficiency virus type 2 ($HIV\text{-}2_{ROD}$), having the following sequence: ##STR36## (b) reagents for the detection of the formation of antigen-**antibody** complex; and (c) a biological reference sample lacking **antibodies** recognized by said peptide composition, wherein the peptide composition, reagents, and biological reference sample are present in an amount sufficient to perform the detection of antigen-**antibody** complex formed between said one or more peptides and **antibodies** present in the biological sample, said detection being indicative of previous exposure to HIV-2.

14. A diagnostic kit for the in vitro detection of the presence or absence of **antibodies** which bind to antigens of a human immunodeficiency virus type 2 (HIV-2) comprising: (a) a peptide having the following sequence: ##STR37## (b) reagents for the detection of the formation of antigen-**antibody** complex; and (c) a biological reference sample lacking **antibodies** recognized by said peptide; wherein the peptide, reagents, and biological reference sample are present in an amount sufficient to perform the detection of antigen-**antibody** complex formed between said peptide and **antibodies** present in the biological sample, said detection being indicative of previous exposure to HIV-2.

L3 ANSWER 9 OF 10 USPATFULL on STN
93:46308 Antigen of a human retrovirus, namely p18 protein of human immunodeficiency virus (HIV), compositions containing the antigen, a diagnostic method for detecting acquired immune deficiency syndrome (AIDS) and pre-AIDS and a kit therefor.
Montagnier, Luc, Le Plessis-Robinson, France
Chermann, Jean-Claude, Elancourt, France
Barre-Sinoussi, Francoise, Issy les Moulineaux, France
Vezinet-Brun, Francoise, Paris, France

Rouzioux, Christine, Paris, France
Rozenbaum, Willy, Paris, France
Dauguet, Charles, Paris, France
Gruest, Jacqueline, L'Hay les Roses, France
Nugeyre, Marie-Theresa, Paris, France
Rey, Francoise, Paris, France
Axler-Blin, Claudine, Paris, France
Chamaret, Solange, Paris, France
Institut Pasteur, France (non-U.S. corporation)
US 5217861 19930608
APPLICATION: US 1988-158073 19880212 (7)
PRIORITY: GB 1983-24800 19830915
ZA 1984-7005 19840916
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Protein compositions containing proteins of the lymphadenopathy virus, which compositions are used for diagnosis of antibodies of such protein in biological fluids, especially blood serum, for the detection or absence of infection. Such compositions contain typically the p18, p13 and/or p25 proteins.

CLM What is claimed is:

1. An in vitro diagnostic method for the detection of the presence or absence of **antibodies** which bind to antigens of human retrovirus indicative of Acquired Immune Deficiency Syndrome (AIDS) or of Lymphadenopathy Associated Syndrome (LAS), which method comprises contacting isolated p18 protein of said retrovirus with a biological fluid for a time and under conditions sufficient for the protein and **antibodies** in the biological fluid to form a complex; and detecting the formation of the complex.

2. The method as claimed in claim 1, wherein the detecting step further comprises measuring the formation of said complex.

3. The method as claimed in claim 1, wherein the biological fluid is human serum.

4. Structural protein of Human Immunodeficiency Virus (HIV), which is p18 protein of said virus, and said protein is in isolated form.

5. A labeled polypeptide, wherein the polypeptide is capable of being immunologically recognized by serum of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS); the polypeptide is p18 protein of Human Immunodeficiency Virus (HIV) in isolated form; and said label is an immunoassay label selected from the group consisting of a radioactive label, an enzyme label, and a fluorescent label.

6. An in vitro diagnostic method for the detection of the presence or absence of **antibodies** which bind to antigens of human retrovirus indicative of Acquired Immune Deficiency Syndrome (AIDS) or of Lymphadenopathy Associated Syndrome (pre-AIDS), which method comprises contacting an isolated antigen mixture comprising (A) p18 protein of said retrovirus, and (B) p25 protein of said retrovirus, with a biological fluid, for a time and under conditions sufficient for the antigen and **antibody** in the biological fluid to form an antigen-**antibody** complex; and detecting the formation of the complex.

7. An isolated mixture of structural proteins of Human Immunodeficiency Virus (HIV), wherein the proteins are p18 and p25 proteins.

8. An in vitro diagnostic method for the detection of the presence or absence of **antibodies** which bind to antigens of human retrovirus indicative of Acquired Immune Deficiency Syndrome (AIDS) or of Lymphadenopathy Associated Syndrome (LAS), which method comprises contacting **p12** protein of said retrovirus with a biological fluid for a time and under conditions sufficient for the protein and **antibodies**

in the biological fluid to form a complex; and detecting the formation of the complex.

9. Structural protein of Human Immunodeficiency Virus (HIV), which is **p12** protein of said virus, and said protein is in isolated form.

10. A labeled polypeptide, wherein the polypeptide is capable of being immunologically recognized by **antibodies** in the serum of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS); the polypeptide is **p12** protein of Human Immunodeficiency Virus (HIV) in isolated form; and said label is an immunoassay label selected from the group consisting of a radioactive label, an enzyme label, and a fluorescent label.

11. A mixture of structural proteins of Human Immunodeficiency Virus (HIV), wherein the proteins are selected from the group consisting of **p12**, p18, and p25 proteins, and the mixture is in isolated form.

L3 ANSWER 10 OF 10 USPATFULL on STN
91:94680 Retrovirus capable of causing AIDS, means and method for detecting it in vitro.
Montagnier, Luc, Le Plessis Robinson, France
Chamaret, Solange, Paris, France
Guetard, Denise, Paris, France
Alizon, Marc, Paris, France
Clavel, Francois, Paris, France
Guyader, Mireille, Paris, France
Sonigo, Pierre, Paris, France
Brun-Vezinet, Francoise, Paris, France
Rey, Marianne, Paris, France
Rouzioux, Christine, Paris, France
Katlama, Christine, Paris, France
Institut Pasteur, Paris, France (non-U.S. corporation)
US 5066782 19911119
APPLICATION: US 1990-462908 19900110 (7)
PRIORITY: FR 1986-910 19860122
FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
FR 1986-3881 19860318
FR 1986-4215 19860324
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a new class of retroviruses, designated by HIV-2, of which samples have been deposited to the ECACC under numbers 87.01.1001 and 87.01.1002 and to the NCIB under numbers 12.398 and 12.399.

It relates also to antigens capable to be obtained from this virus, particularly proteins p12, p16, p26 and gp140. These various antigens can be used for the diagnosis of the disease, especially by contacting these antigens with a serum of a patient submitted to the diagnosis.

It relates to immunogenic compositions containing more particularly the glycoprotein gp140. Finally it concerns nucleotidic sequences, which can be used especially as hydridization probes, derived from the RNA of HIV-2.
CLM What is claimed is:
1. Antigen of Human Immunodeficiency Virus Type 2 (HIV-2), wherein the antigen is selected from the group consisting of **p12** protein and p42 protein, and wherein the antigen is substantially pure and is capable of specifically reacting with **antibodies** serum of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

2. Antigen as claimed in claim 1, which is **p12** protein of HIV-2.

3. Antigen as claimed in claim 1, which is p42 protein of HIV-2.

4. A purified or isolated antigen comprising a protein of HIV-2, wherein said protein is **p12**, is capable of specifically reacting with anti-**p12 antibodies** in serum of a HIV-2 infected individual, and said protein comprises an amino acid sequence substantially as follows: ##STR2##

5. A purified or isolated antigen comprising a protein of HIV-2, wherein said protein is p16, is capable of specifically reacting with anti-p16 **antibodies** in serum of a HIV-2 infected individual, and said protein comprises an amino acid sequence substantially as follows: ##STR3##

6. A purified or isolated antigen comprising a protein of HIV-2, wherein said protein is p26, is capable of specifically reacting with anti-p26 **antibodies** in serum of a HIV-2 infected individual, and said protein comprises an amino acid sequence substantially as follows: ##STR4##

7. A purified or isolated antigen comprising a glycoprotein of HIV-2, wherein said glycoprotein is gp40, is capable of specifically reacting with anti-gp140 **antibodies** in serum of a HIV-2 infected individual, and said glycoprotein comprises an amino acid sequence substantially as follows: ##STR5##

8. An immunogenic composition comprising a substantially purified antigen as claimed in claim 7 and a pharmacologically acceptable vehicle suitable for injection into a mammal for induction of **antibodies** against said antigen.

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     (FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004)

     FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
                E MONTAGNIER LUC/IN
L1             99 S E3
L2             65 S L1 AND (ANTIBOD?/CLM)
L3             10 S L2 AND (P12/CLM)

=> s l2 and (p18/clm)
            53 P18/CLM
L4              5 L2 AND (P18/CLM)

=> s l4 not l3
L5              3 L4 NOT L3

=> d l5,cbib,ab,clm,1-3

L5   ANSWER 1 OF 3  USPATFULL on STN
94:110664 Oligopeptides comprising p18 protein of human immunodeficiency virus
    (HIV), compositions comprising peptides of p18 protein of HIV, and
    diagnostic kits and methods for detecting acquired immune deficiency
    syndrome (AIDS).
    Montagnier, Luc, Le Plessis-Robi, France
    Chermann, Jean-Claude, Elancourt, France
    Barre-Sinoussi, Francoise, Issy les Moulineaux, France
    Vezinet-Brun, Francoise, Paris, France
    Rouzioux, Christine, Paris, France
    Rozenbaum, Willy, Paris, France
    Dauguet, Charles, Paris, France
    Gruest, Jacqueline, L'Hay les Roses, France
    Nugeyre, Marie-Theresa, Paris, France
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Rey, Francoise, Paris, France
Axler-Blin, Claudine, Paris, France
Chamaret, Solange, Paris, France
Institut Pasteur, France (non-U.S. corporation)
US 5374519 19941220
APPLICATION: US 1992-952252 19920928 (7)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Protein compositions containing the p18 and p25 proteins of the lymphadenopathy virus are used for detecting antibodies in blood serum as indicative of infection by such virus. The proteins can be used in various conventional ways to perform immunoassays for the detection of the antibodies.
CLM What is claimed is:
1. A diagnostic kit for the detection of the presence or absence of human **antibodies** which bind to antigens of human immunodeficiency virus type 1 (HIV-1), wherein said kit consists essentially of: (a) **p18** and p25 protein of HIV-1; (b) a reagent to detect antigen-**antibody** complex that comprise said **p18** or p25 protein of HIV-1; (c) a biological reference material lacking **antibodies** that immunologically bind with said **p18** and p25 protein of HIV-1; (d) a comparison sample comprising **antibodies** against **p18** and p25 protein of HIV-1; and wherein said **p18** and p25 proteins, reagent, and biological reference material are present in an amount sufficient to perform said detection.

2. The diagnostic kit of claim 1, wherein said regent to detect said antigen-**antibody** complex is a label selected from the group consisting of an enzyme, enzyme substrate, enzyme cofactor, enzyme inhibitor, radionuclide, fluorescent label, chemiluminescent label, ligand, and a light emitter-quencher.

3. A diagnostic method for detecting the presence of **antibodies** that specifically bind to antigens of human immunodeficiency virus type 1 (HIV-1), consisting essentially of: (a) contacting **p18** antigen of HIV-1 with a biological sample for a time and under conditions sufficient to permit formation of antigen-**antibody** complex between said **p18** antigen and said **antibodies**; and (b) measuring the formation of said complex to determine the amount of **antibodies** to **p18** antigen present in the sample.

4. The method according to claim 3, wherein said biological sample is from a human.

5. The method according to claim 3, further comprising (a) contacting p25 antigen of HIV-1 with a biological sample for a time and under conditions sufficient to permit formation of antigen-**antibody** complex between said p25 antigen and said **antibodies**; and (b) measuring the formation of said complex to determine the amount of **antibodies** to p25 present in the sample.

6. The method according to claim 5, wherein said biological sample is from a human.

7. A composition comprising **p18** protein and p25 protein of human immunodeficiency virus type 1 (HIV-1).

8. The composition according to claim 7, wherein said proteins are labeled with a label selected from the group consisting of an enzyme, enzyme substrate, enzyme cofactor, enzyme inhibitor, radionuclide, fluorescent label, chemiluminescent label, ligand, and a light emitter-quencher.

L5 ANSWER 2 OF 3 USPATFULL on STN
92:104888 Antibody detection of antibodies to viral proteins in serum.

Montagnier, Luc, Le-Plessis-Robinson, France
Chermann, Jean C., Elancourt, France
Barre-Sinoussi, Francoise, Issy Les Moulineaus, France
Vezinet-Brun, Francoise, Paris, France
Rouzioux, Christine, Paris, France
Rozenbaum, Willy, Paris, France
Dauguet, Charles, Paris, France
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Axler-Blin, Claudine, Paris, France
Chamaret, Solange, Paris, France
Institut Pasteur, France (non-U.S. corporation)
US 5173400 19921222
APPLICATION: US 1991-780572 19911022 (7)
PRIORITY: GB 1983-24800 19830915
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Protein compositions containing the p18 and p25 proteins of the lymphadenopathy virus are used for detecting antibodies in blood serum as indicative of infection by such virus. The proteins can be used in various conventional ways to perform immunoassays for the detection of the antibodies.
CLM What is claimed is:

1. A diagnostic method for detecting the presence of **antibodies** that specifically bind to antigens of human immunodeficiency virus (HIV), comprising: (a) contacting a radioactively labeled lysate of HIV-1 comprising **p18** antigen with a biological sample for a time and under conditions sufficient to permit formation of antigen-**antibody** complex between said **p18** antigen and said **antibodies**; and (b) measuring the formation of said complex to determine the amount of **p18** antigen present in the sample.

2. The method according to claim 1, wherein said biological sample is from a human.

3. The method according to claim 2, wherein said amount of **p18** antigen present in the sample is used to determine the amount of **p18** antigen present in the human.

4. The method according to claim 3, further comprising determining the amount of free complexing **antibody** to **p18** antigen of HIV present in the human.

5. The method according to claim 1, further comprising (a) contacting a radioactively labeled lysate of HIV-1 comprising p25 antigen with a biological sample for a time and under conditions sufficient to permit formation of antigen-**antibody** complex between said p25 antigen and said **antibodies**; and (b) measuring the formation of said complex to determine the amount of p25 present in the sample.

6. The method according to claim 5, wherein said biological sample is from a human.

7. The method according to claim 6, wherein said amount of **p18** antigen present in the sample is used to determine the amount of **p18** antigen present in the human, and said amount of p25 antigen present in the sample is used to determine the amount of p25 antigen present in the human.

8. The method according to claim 6, wherein said amount of p25 antigen present in the sample is measured as a sum of the amount of **p18** antigen and p25 antigen present in the sample.

9. The method according to claim 7, further comprising determining the amount of free complexing **antibody** to **p18** antigen of HIV present in

the human, and determining the amount of free complexing **antibody** to p25 antigen of HIV present in the human.

L5 ANSWER 3 OF 3 USPATFULL on STN
91:82139 Method and kit or detecting antibodies to antigens of Human Immunodeficiency Virus type 2 (HIV-2).
Montagnier, Luc, Le Plessis Robinson, France
Guetard, Denise, Paris, France
Brun-Vezinet, Francoise, Paris, France
Clavel, Francois, Paris, France
Institut Pasteur, Paris, France (non-U.S. corporation)
US 5055391 19911008
APPLICATION: US 1990-462353 19900103 (7)
PRIORITY: FR 1986-910 19860122
FR 1986-911 19860122
FR 1986-1635 19860206
FR 1986-1985 19860213
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a new variety of retroviruses designated Human Immunodeficiency Virus Type II, HIV-II, samples of which have been deposited at CNCM as I-502 and I-532. It also concerns purified forms of the antigens which can be obtained from this virus, in particular from the gp 36 and gp 130-140 proteins. These various antigens are useful in medical diagnosis and kits, in particular by being placed in contact with serum of the patient to be diagnosed. Lastly, the invention relates to immunizing compositions, in particular containing at least one of glycoproteins gp 36 and gp 130-140.
CLM What is claimed is:
1. An in vitro diagnostic method for the detection of the presence or absence of human **antibodies** which bind to antigens of a human retrovirus, which is Human Immunodeficiency Virus Type 2 (HIV-2), indicative of Lymphadenopathy, wherein said antigens comprise protein antigen, glycoprotein antigen, peptide antigen, or a mixture thereof of HIV-2, and wherein said method comprises contacting antigens of HIV-2 with a biological fluid for a time and under conditions sufficient for the antigens and **antibodies** in the biological fluid to form antigen-**antibody** complexes, and detecting the formation of the complexes.

2. The method of claim 1, wherein the biological fluid is human serum.

3. The method of claim 1, wherein the biological fluid is from a patient with pre-AIDS.

4. The method of claim 1, wherein the human retrovirus is a human retroviral variant of LAV-2 which is cytopathic for human lymphocytes.

5. The method of claim 1, wherein the biological fluid is simultaneously contacted with a mixture of antigens comprising protein, glycoprotein, and peptides of Lymphadenopathy Associated Virus Type 1 (LAV-1) capable of binding to human **antibodies**, in an amount sufficient to detect the presence or absence of human **antibodies** which bind to antigens of LAV-1.

6. The method of claim 1, wherein the antigens comprise a lysate of HIV-2 and the antigens are capable of being immunologically recognized by serum of a patient afflicted with Lymphadenapathy Syndrome (LAS), Acquired Immune Deficiency Syndrome (AIDS), or AIDS Related Complex (ARC).

7. The method of claim 1, wherein the antigens comprise at least one protein or glycoprotein of HIV-2 selected from the group consisting of p16, p26, gp 36, and gp 130-140.

8. The method of claim 1, wherein the antigens comprise p16 and p26

proteins of HIV-2.

9. The method of claim 1, wherein the antigens comprise gp 36 glycoprotein of HIV-2.

10. The method of claim 1, wherein the antigens comprise gp 130-140 glycoprotein of HIV-2.

11. The method of claim 1, wherein the antigens comprise p26 protein and gp36 glycoprotein of HIV-2.

12. The method of claim 1, wherein the antigens comprise p26 protein and gp 36 glycoprotein and gp 130-140 glycoprotein of HIV-2.

13. The method of claim 1, wherein the antigens comprise p16 and p26 proteins and gp 130-140 glycoproteins of HIV-2.

14. The method of claim 1, wherein the biological fluid is also contacted with antigens indicative of Human Immunodeficiency Virus Type 1 (HIV-1), which are capable of binding to human **antibodies**, in an amount sufficient to detect the presence or absence of human **antibodies** which bind to antigens of HIV-1, wherein said antigens comprise protein antigen, glycoprotein antigen, peptide antigen, or a mixture thereof indicative of HIV-1.

15. The method of claim 14, wherein the antigens of HIV-1 are selected from the group consisting of **p18**, p25, gp 41-43, gp 110/120, and mixtures thereof, of HIV-1.

16. The method of claim 14, wherein the antigens of HIV-1 comprise p25 and gp 41 of HIV-1.

17. The method of claim 14, wherein the antigens are isolated from lysates of HIV-1 and HIV-2 by affinity chromatography and fixed to a water-insoluble support.

18. The method of claim 1, wherein the antigens are fixed to a water-insoluble support.

19. The method of claim 1, wherein the antigens are fixed to water-insoluble spheres.

20. The method of claim 1, wherein the antigens are fixed to water-insoluble agarose spheres.

21. The method of claim 1, wherein the antigens are fixed to wells of a titration microplate.

22. The method of claim 1, wherein the antigens do not immunologically cross-react with p19 protein or p24 protein of human T-lymphotropic virus type 1 (HTLV-I) or of human T-Lymphotropic virus type 2 (HTLV-II).

23. A diagnostic kit for the detection of the presence or absence of human **antibodies** which bond to antigens of Human Immunodeficiency Virus Type 2 (HIV-2) indicative of lymphadenopathy, wherein said antigens comprise protein antigen, glycoprotein antigen, peptide antigen, or a mixture thereof, and wherein said kit comprises antigens of HIV-2, a reagent to detect antigen-**antibody** complexes that comprise said antigens, a biological reference material lacking **antibodies** that immunologically bind with said antigens, a comparison sample comprising **antibodies** of HIV-2, and wherein said antigens, reagent, and biological reference material are present in an amount sufficient to perform said detection.

24. The diagnostic kit of claim 23, wherein said immune complexes are detected by employing immunological labels selected from the group

consisting of radioisotopes, enzymes, and fluorescent labels.

25. The diagnostic kit of claim 23, wherein said kit also contains antigens of Lymphadenopathy Associated Virus Type 1 (LAV-1), wherein said antigens comprise a mixture of protein, glycoprotein, and peptides of Lymphadenopathy Associated Virus Type 1 (LAV-1) capable of binding to human **antibodies**, in an amount sufficient to detect the presence or absence of human **antibodies** which bind to antigens of LAV-1.

26. An in vitro diagnostic method for the detection of the presence or absence of human **antibodies** which bind to antigens indicative of a human retrovirus, which is Human Immunodeficiency Virus Type 2 (HIV-2), wherein said antigens comprise protein antigen, glycoprotein antigen, peptide antigen, or a mixture thereof indicative of HIV-2, and wherein said method comprises contacting said antigens with a biological fluid for a time and under conditions sufficient for the antigens and **antibodies** in the biological fluid to form an antigen-**antibody** complex, wherein said antigens are substantially free of viral particles, and detecting the formation of the complex.

27. The method of claim 26, wherein the biological fluid is human serum.

28. The method of claim 26, wherein the antigen is a peptide.

29. The method of claim 26, wherein the antigen is a glycoprotein.

30. The method of claim 26, wherein said antigen is labeled with a immunoassay label selected form the group consisting of radioisotopes, enzymes, and fluorescent labels.

31. The method of claim 26, wherein the human retrovirus is LAV-2.

32. The method of claim 21, wherein the human retrovirus is a human retroviral variant of LAV-2 which is cytopathic for human lymphocytes.

33. The method of claim 26, wherein the antigens are derived from a retrovirus having the characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-502.

34. The method of claim 26, wherein the antigens are derived from a retrovirus having the characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-532.

35. The method of claim 26, wherein the antigens comprise an extract of HIV-2, and the antigens are capable of being immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS), Acquired Immune Deficiency Syndrome (AIDS), or AIDS Related Complex (ARC).

36. The method of claim 26, wherein the antigen is an external envelope protein of HIV-2.

37. The method of claim 26, wherein the antigen is a transmembrane protein.

38. The method of claim 26, wherein the antigen is a major core protein of HIV-2.

39. The method of claim 26, wherein the antigen is a core protein of HIV-2, other than a major core protein of HIV-2.

40. The method of claim 26, wherein the antigens comprise at least one protein or glycoprotein of HIV-2 selected from the group consisting of p16, p26, gp 36, and gp 130-140.

41. The method of claim 26, wherein the antigens comprise p16 and p26

proteins of HIV-2.

42. The method of claim 26, wherein the antigens comprise gp 36 glycoprotein of HIV-2.

43. The method of claim 26, wherein the antigens comprise gp 130-140 glycoprotein of HIV-2.

44. The method of claim 26, wherein the antigens comprise p26 protein and gp36 glycoprotein of HIV-2.

45. The method of claim 26, wherein the antigens comprise p26 protein and gp 36 glycoprotein and gp 130-140 glycoprotein of HIV-2.

46. The method of claim 26, wherein the antigens comprise p16 and p26 proteins and gp 130-140 glycoproteins of HIV-2.

47. The method of claim 26, wherein the biological fluid is also contacted with antigens indicative of Human Immunodeficiency Virus Type 1 (HIV-1), which are capable of binding to human **antibodies**, in an amount sufficient to detect the presence or absence of human **antibodies** which bind to antigens of HIV-1.

48. The method of claim 47, wherein the antigens of HIV-1 are selected from the group consisting of **p18**, p25, gp 41-43, gp 110/120, and mixtures thereof, of HIV-1.

49. The method of claim 26, wherein the antigens are from disrupted whole virus particles present in the lysate or isolated therefrom.

50. A diagnostic kit for the detection of the presence or absence of human **antibodies** which bind to antigens indicative of Human Immunodeficiency Virus Type 2 (HIV-2), wherein said antigens comprise protein antigen, glycoprotein antigen, peptide antigen, or a mixture thereof indicative of HIV-2, and wherein said kit comprises said antigens, a reagent to detect antigen-**antibody** complexes that comprise said antigens, a biological reference material lacking **antibodies** that immunologically bind with said antigens, a comparison sample comprising **antibodies** of HIV-2, and wherein said antigens, reagent, and biological reference material are present in an amount sufficient to perform said detection.

51. The kit of claim 50, wherein the antigen is a peptide.

52. The kit of claim 50, wherein the antigen is a glycoprotein.

53. The kit of claim 50, wherein said antigen is labeled with an immunoassay label selected from the group consisting of radioisotopes, enzymes, and fluorescent labels.

54. The kit of claim 50, wherein the antigens comprise an extract or a lysate of HIV-2, and the antigens are capable of being immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS), Acquired Immune Deficiency Syndrome (AIDS), or AIDS Related Complex (ARC).

55. The kit of claim 50, wherein the antigen is an external envelope protein of HIV-2.

56. The kit of claim 50, wherein the antigen is a transmembrane protein.

57. The kit of claim 50, wherein the antigen is a major core protein of HIV-2.

58. The kit of claim 50, wherein the antigen is a core protein of HIV-2, other than a major core protein of HIV-2.

59. The kit of claim 50, wherein the antigens comprise at least one protein or glycoprotein of HIV-2 selected from the group consisting of p16, p26, gp 36, and gp 130-140.

60. The kit of claim 50, wherein the antigens comprise p16 and p26 proteins of HIV-2.

61. The kit of claim 50, wherein the antigens comprise gp 36 glycoprotein of HIV-2.

62. The kit of claim 50, wherein the antigens comprise gp 130-140 glycoprotein of HIV-2.

63. The kit of claim 50, wherein the antigens comprise p26 protein and gp 36 glycoprotein of HIV-2.

64. The kit of claim 50, wherein the antigens comprise p26 protein and gp 36 glycoprotein and gp 130-140 glycoprotein of HIV-2.

65. The kit of claim 50, wherein the antigens comprise p16 and p26 proteins and gp 130-140 glycoproteins of HIV-2.

66. The kit of claim 50, wherein said kit also comprises antigens indicative of Human Immunodeficiency Virus Type 1 (HIV-1), which are capable of binding to human **antibodies**, in an amount sufficient to detect the presence or absence of human **antibodies** which bind to antigens of HIV-1, wherein said antigens comprise a mixture of protein antigen, glycoprotein antigen, and peptide antigen indicative of HIV-1.

67. The kit of claim 66, wherein the antigens of HIV-1 are selected from the group consisting of **p18**, p25, gp 41-43, gp 110/120, and mixtures thereof, of HIV-1.

68. The kit of claim 50, wherein the antigens are fixed to a water-insoluble support.

69. The kit of claim 50, wherein the antigens are fixed to water-insoluble spheres.

70. The kit of claim 50, wherein the antigens are fixed to water-insoluble agarose spheres.

71. The kit of claim 50, wherein the antigens are fixed to wells of a titration microplate.

72. The kit of claim 66, wherein the antigens are isolated from lysates of HIV-1 and HIV-2 by affinity chromatography and fixed to a water-insoluble support.

73. The kit of claim 50, wherein the antigens do not immunologically cross-react with p19 protein or p24 protein of human T-lymphotropic virus type 1 (HTLV-I) or of human T-lymphotropic virus type 2 (HTLV-II).

74. The kit of claim 50, wherein the antigens are from disrupted whole virus particles present in the lysate or isolated therefrom.

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     (FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004)

     FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
               E MONTAGNIER LUC/IN
L1           99 S E3
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L2            65 S L1 AND (ANTIBOD?/CLM)
L3            10 S L2 AND (P12/CLM)
L4             5 S L2 AND (P18/CLM)
L5             3 S L4 NOT L3

=> s l2 and (p25/clm)
            58 P25/CLM
L6          13 L2 AND (P25/CLM)

=> s l6 not (l3 or l5)
L7             8 L6 NOT (L3 OR L5)

=> d l7,cbib,ab,clm,1-8

L7   ANSWER 1 OF 8  USPATFULL on STN
2003:203370 Antibody directed against HIV-1 P25 antigen.
    Montagnier, Luc, Le Plessis Robinson, FRANCE
    Chermann, Jean-Claude, Elancourt, FRANCE
    Barre-Sinoussi, Francoise, Issy les Moulineaux, FRANCE
    Brun-Vezinet, Francoise, Paris, FRANCE
    Rouzioux, Christine, Paris, FRANCE
    Rozenbaum, Willy, Paris, FRANCE
    Dauguet, Charles, Paris, FRANCE
    Gruest, Jacqueline, L'Hay les Roses, FRANCE
    Nugeyre, Marie-Therese, Paris, FRANCE
    Rey, Francoise, Paris, FRANCE
    Axler-Blin, Claudine, Paris, FRANCE
    Chamaret, Solange, Paris, FRANCE
    Gallo, Robert C., Bethesda, MD, United States
    Popovic, Mikulas, Bethesda, MD, United States
    Sarngadharan, Mangalasseril G., Vienna, VA, United States
    Institut Pasteur, Paris, FRANCE (non-U.S. corporation)The United States of
    America as represented by the Department of Health and Human Services,
    Washington, DC, United States (U.S. government)
    US 6500023 B1 20030729
    APPLICATION: US 1993-19297  19930218 (8)
    PRIORITY: GB 1983-3424800  19830915
    DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      Antibodies which bind with antigens of human immunodeficiency virus type
        1 (HIV-1), such as Lymphadenopathy Associated Virus (LAV), are
        disclosed. Retroviruses associated with Acquired Immune Deficiency
        Syndrome (AIDS) are isolated from the sera of patients afflicted with
        Lymphadenopathy Syndrome (LAS) or AIDS. Viral extracts, structural
        proteins and other fractions of the retrovirus immunologically recognize
        the sera of such patients.
CLM     What is claimed is:
        1. An isolated antibody directed against HIV-1 p25 antigen, wherein
        said antibody is formed using an HIV-1 extract containing p25 or
        using purified HIV-1 p25 protein in animals.

        2. The isolated antibody of claim 1, wherein said antibody is
        monoclonal.


L7   ANSWER 2 OF 8  USPATFULL on STN
2002:194692 Methods and kits employing LAV antigens for the detection of
    HIV-1-specific antibodies.
    Montagnier, Luc, Le Plessis-Robinson, FRANCE
    Chermann, Jean-Claude, Elancourt, FRANCE
    Barre-Sinoussi, Francoise, Issy les Moulineaux, FRANCE
    Brun-Vezinet, Francoise, Paris, FRANCE
    Rouzioux, Christine, Paris, FRANCE
    Rozenbaum, Willy, Paris, FRANCE
    Dauguet, Charles, Paris, FRANCE
    Gruest, Jacqueline, L'Hay les Roses, FRANCE
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Nugeyre, Marie-Therese, Paris, FRANCE
Rey, Francoise, Paris, FRANCE
Axler-Blin, Claudine, Paris, FRANCE
Chamaret, Solange, Paris, FRANCE
Gallo, Robert C., Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadharan, G., Vienna, VA, United States
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)The United States of America as represented by the Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 6428952 B1 20020806
APPLICATION: US 1995-424631 19950419 (8)
PRIORITY: GB 1983-8424800 19830915
DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Retroviruses associated with Acquired Immune Deficiency Syndrome (AIDS), including Lymphadenopathy Associated Virus (LAV), are isolated from the sera of patients afflicted with Lymphadenopathy Syndrome (LAS) or AIDS. LAV is a Human Immunodeficiency Virus (HIV). Viral extract, structural proteins and other fractions of the retrovirus immunologically recongize the sera of such patients. Immunological reaction is used to detect antibodies that specifically bind to antigenic sites of the retrovirus in samples of body fluids from patients with AIDS or risk of AIDS.

CLM What is claimed is:

1. A method for detecting **antibodies** against an HIV-1 retrovirus in a body fluid comprising: (a) providing a body fluid from a human subject; (b) providing a control antigen; (c) contacting said body fluid with said control antigen; (d) contacting said body fluid with a composition comprising purified HIV-1 **p25** antigen; (e) detecting the immunological complexes formed both between an **antibody** in said body fluid and said control antigen and between an **antibody** in said body fluid and said composition; and (f) comparing the level of immunological complexes formed in steps (c) and (d).

2. The method of claim 1 wherein the tested body fluid is serum.

3. The method of claim 1, wherein the detection of said immunological complexes is achieved by reacting said immunological complexes with a labeled reagent selected from the group consisting of antihuman immunoglobulin-**antibodies** and bacterial A protein of Staphylococcus aureus, and then detecting the product formed between said complex and said reagent.

4. A kit for detecting anti-HIV-1 **antibodies** in a body fluid comprising: (a) a first container comprising a composition comprising purified HIV-1 **p25** antigen; and (b) a second container comprising a detection reagent.

5. The kit of claim 4, wherein said kit comprises a labeled reagent selected from the group consisting of antihuman immunoglobulin **antibodies** and protein A of Staphylococcus aureus.

6. A composition comprising purified HIV-1 **p25** antigen.

7. A purified HIV-1 **p25** antigen.

L7 ANSWER 3 OF 8 USPATFULL on STN
2002:122444 Methods and kits for detecting antibodies against an HIV variant.
Montagnier, Luc, Le Plessis-Robinson, FRANCE
Chermann, Jean-Claude, Elancourt, FRANCE
Barre-Sinoussi, Francoise, Issy les Moulineaux, FRANCE
Rouzioux, Christine, Paris, FRANCE
Rozenbaum, Willy, Paris, FRANCE
Dauguet, Charles, Paris, FRANCE
Gruest, Jacqueline, L'Hay les Roses, FRANCE

Nugeyre, Marie-Therese, Paris, FRANCE
Rey, Francoise, Paris, FRANCE
Gallo, Robert C, Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadhar, Mangalasseril G, Vienna, VA, United States
Axler-Blin, Claudine, Paris, FRANCE
Chamaret, Solange, Paris, FRANCE
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)The United States of America as represented by the Secretary of the Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 6395495 B1 20020528
APPLICATION: US 1999-437126 19991110 (9)
PRIORITY: GB 1983-24800 19830915
DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention concerns a retrovirus extract containing a p25 protein which recognizes immunologically sera of patients afflicted with lymphadenopathy syndrom (LAS) or acquired immune deficiency syndrom (AIDS). It relates to a method and kit for in vivo assay of LAS or AIDS involving contacting sera from patients to be diagnosed for such diseases with said retrovirus extract and by detecting the immunological reaction, if any.
CLM What is claimed is:

1. A method for the in vitro identification of human immunodeficiency virus type 1 (HIV-1) comprising: subjecting cultures of infected and uninfected human lymphocytes to a protein labeling reaction; lysing said labeled cultures of lymphocytes; contacting said lysed lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; separating said immunocomplexes; and detecting labeled proteins in said separated immunocomplexes, wherein the detection of labeled HIV-1 proteins in said infected culture is indicative of the presence of a cell infected by HIV-1 in said culture.

2. The method of claim 1, wherein said immunocomplexes are separated by precipitation with protein A.

3. The method of claim 1, wherein said labeled proteins are resolved on a plyacrylamide gel under denaturing conditions.

4. The method of claim 1, wherein said proteins are radiolabeled.

5. The method of claim 4, wherein said proteins are radiolabeled with ^{35}S-methionine.

6. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a fluorescently-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immunocomplexes by detecting fluorescence in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

7. A method for the in vitro identification of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in patient serum comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a fluorescently-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immunocomplexes by detecting fluorescence in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in said patient serum.

8. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes, wherein said **antibody** is fluorescently labeled; and determining the presence of immunocomplexes by detecting fluorescence in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

9. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with an enzymatically-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immnocomplexes by an enzymatic reaction in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

10. A method for the in vitro identification of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in patient serum comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with an enzymatically-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immunocomplexes by an enzymatic reaction in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in said patient serum.

11. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes. wherein said **antibody** is enzymatically labeled; and determining the presence of immunocomplexes by an enzymatic reaction in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

12. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a labeled **antibody** that binds to said immunocomplexes; and determining the presence of labeled immunocomplexes in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

13. A method for the in vitro identification of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in patient serum comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** to HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a labelled **antibody** that binds to said immunocomplexes; and determining the presence of labeled immunocomplexes in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in said patient serum.

14. A method for the in vitro identification of a human immunodeficiency

virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes, wherein said **antibody** is labeled; and determining the presence of labeled immunocomplexes in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

L7 ANSWER 4 OF 8 USPATFULL on STN
1998:48164 Diagnostic kits and methods for detecting antibodies to LAV viruses.
Alizon, Marc, Paris, France
Sonigo, Pierre, Paris, France
Wain-Hobson, Simon, Montigny les Bretonneux, France
Montagnier, Luc, Le Plessis Robinson, France
Institut Pasteur, Paris, France (non-U.S. corporation)
US 5747242 19980505
APPLICATION: US 1995-466907 19950606 (8)
PRIORITY: EP 1986-401380 19860623
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A variant of a LAV virus, designated LAV_{ELI} and cable of causing AIDS. The cDNA and antigens of the LAV_{ELI} virus can be used for the diagnosis of AIDS an pre-AIDS.

CLM What is claimed is:

1. A method for the in vitro detection of an **antibody** directed against a lymphadenopathy asscciated virus in a human body fluid, comprising the steps of contacting said body fluid with an isolated or synthetic peptide, and then detecting the immunological reaction between said peptide and said **antibody**, wherein said isolated or synthetic peptide comprises an amino acid sequence that is a fragment of the following amino acid sequence: ##STR1## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment comprises at least one amino acid sequence selected from the group consisting of amino-acyl residues 37-130, amino-acyl residues 211-289, amino-acyl residues 488-530, amino-acyl residues 490-620, amino-acyl residues 680-700, amino-acyl residues 1-530, amino-acyl residues 34-530, and amino-acyl residues 531-877 of an envelope glycoprotein of LAV_{ELI} virus. and wherein the hyphens represent a gap introduced to align the sequence with LAV_{BRU} as set forth in FIG. 3.

2. The method of claim 1, wherein said amino acid sequence is selected from the group consisting of amino-acyl residues 37 to 130, 211 to 289, and 488 to 530.

3. The method of claim 1, wherein said amino acid sequence comprises amino-acyl residues 490 to 620 or 680 to 700.

4. The method of claim 1, wherein said amino acid sequence is selected from the group consisting of: amino-acyl residues 1 to 530; amino-acyl residues 34 to 530; and amino-acyl residues 531 to 877.

5. The method of claim 1, wherein said lymphadenopathy associated virus is LAV_{ELI}.

6. The method of claim 1, wherein said contacting and detecting steps comprise: a) depositing a predetermined amount of said peptide into wells of a microplate; b) introducing increasing dilutions of said body fluid into said wells; c) incubating said microplate to allow the formation of **antibody**-peptide complexes; d) washing the microplate; e) adding to said wells a labeled **antibody** directed against

immunoglobulins; and then f) determining whether an antigen-**antibody** complex has formed in said wells.

7. A method for the in vitro detection of an **antibody** directed against a lymphadenopathy associated virus in a human body fluid, comprising the steps of contacting said body fluid with an isolated or synthetic peptide, and then detecting the immunological reaction between said peptide and said **antibody**, wherein said isolated or synthetic peptide comprises an amino acid sequence that is a fragment of the following amino acid sequence: ##STR2## wherein, said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment comprises a **p25** peptide comprising amino-acyl residues 138-385 of gag protein of LAV_{ELI} virus, and wherein the hyphens represent a gap introduced to align the sequence with LAV_{BRU} as set forth in FIG. 3.

8. The method of claim 7, wherein said lymphadenopathy associated virus is LAV_{ELI}.

9. The method of claim 7, wherein said contacting and detecting steps comprise: a) depositing a predetermined amount of said peptide into wells of a microplate; b) introducing increasing dilutions of said body fluid into said wells; c) incubating said microplate to allow the formation of **antibody**-peptide complexes; d) washing the microplate; e) adding to said wells a labeled **antibody** directed against immunoglobulins; and then f) determining whether an antigen-**antibody** complex has formed in said wells.

10. A method for the in vitro detection of an **antibody** directed against a lymphadenopathy associated virus in a human body fluid, comprising the steps of contacting said body fluid with an isolated or synthetic peptide, and then detecting the immunological reaction between said peptide and said **antibody**, wherein said isolated or synthetic peptide comprises an amino acid sequence that is a fragment of the following amino acid sequence: ##STR3## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L, is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment comprises a p13 peptide comprising amino-acyl residues 385-519 of gag protein of LAV_{ELL} virus, and wherein the hyphens represent a gap introduced to align the sequence with LAV_{RM} as set forth in FIG. 3.

11. The method of claim 10, wherein said lymphadenopathy associated virus is LAV_{ELI}.

12. The method of claim 10, wherein said contacting and detecting steps comprise: a) depositing a predetermined amount of said peptide into wells of a microplate; b) introducing increasing dilutions of said body fluid into said wells; c) incubating said microplate to allow the formation of **antibody**-peptide complexes; d) washing the microplate; e) adding to said wells a labeled **antibody** directed against immunoglobulins; and then f) determining whether an antigen-**antibody** complex has formed in said wells.

13. A method for the in vitro detection of an **antibody** directed against a lymphadenopathy associated virus in a human body fluid, comprising the steps of contacting said body fluid with an isolated or synthetic peptide, and then detecting the immunological reaction between said peptide and said **antibody**, wherein said isolated or synthetic peptide comprises an amino acid sequence that is a fragment of the

following amino acid sequence: ##STR4## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment is selected from the group consisting of amino-acyl residues 14-20, amino-acyl residues 50-59, amino-acyl residues 371-383, amino-acyl residues 410-430, and amino-acyl residues 536-557 of the pol protein of LAV_{ELI} virus, and wherein the hyphens represent a gap introduced to align the sequence with LAV_{RM} as set forth in FIG. 3.

14. The method of claim 13, wherein said lymphadenopathy associated virus is LAV_{ELI}.

15. The method of claim 13, wherein said contacting and detecting steps comprise: a) depositing a predetermined amount of said peptide into wells of a microplate; b) introducing increasing dilutions of said body fluid into said wells; c) incubating said microplate to allow the formation of **antibody**-peptide complexes; d) washing the microplate; e) adding to said wells a labeled **antibody** directed against immunoglobulins; and then f) determining whether an antigen-**antibody** complex has formed in said wells.

16. A diagnostic kit for the in vitro detection of **antibodies** against a LAV virus, which kit comprises an antigen selected from the group consisting of the following: an isolated or synthetic peptide comprising an amino acid sequence that is a fragment of the following amino acid sequence: ##STR5## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, F is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment comprises at least one amino acid sequence selected from the group consisting of amino-acyl residues 37-130, amino-acyl residues 211-289, amino-acyl residues 488-530, amino-acyl residues 490-620, amino-acyl residues 630-700, amino-acyl residues 1-530, amino-acyl residues 34-530, and amino-acyl residues 531-877 of an envelope glycoprotein of LAV_{ELI} virus, and wherein the hyphens represent a gap introduced to align the sequence with LAV_{BRU} as set forth in FIG. 3; an isolated or synthetic peptide comprising an amino acid sequence that is a fragment of the following, amino acid sequence: ##STR6## wherein, said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment comprises a **p25** peptide comprising amino-acyl residues 138-385 of gag protein of LAV_{ELI} virus, and wherein the hyphens represent a gap introduced to align the sequence with LAV_{BRU} as set forth in FIG. 3; an isolated or synthetic peptide comprising an amino acid sequence that is a fragment of the following amino acid sequence: ##STR7## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment comprises a p13 peptide comprising amino-acyl residues 385-519 of gag protein of LAV_{ELI} virus, and wherein the hyphens represent a gap introduced to align the sequence with LAV_{BRU} as set forth in FIG. 3; and an isolated or synthetic peptide comprising an amino acid sequence having a fragment of the following amino acid sequence: ##STR8## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic

acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, wherein said fragment is selected from the group consisting of amino-acyl residues 14-20, amino-acyl residues 50-59, amino-acyl residues 371-383, amino-acyl residues 410-430, and amino-acyl residues 536-557 of the pol protein of LAV_{ELI} virus, and wherein the hyphens represent a gap introduced to align the sequence with LAV_{BRU} as set forth in FIG. 3; a reagent or reagents for detecting a peptide-**antibody** complex; a biological reference material lacking **antibodies** that bind to said peptide or peptides; and a comparison sample comprising **antibodies** that bind to said peptide or peptides.

L7 ANSWER 5 OF 8 USPATFULL on STN
93:50481 Diagnostic method and composition for early detection of HIV infection

Montagnier, Luc, Robinson, France
Rochat, Herve, Minet, France
Bahraoui, El M., Cacheu, France
Chamaret, Solange, Paris, France
Ferris, Stephane, Paris, France
Granier, Claude, Hameau Saint-Felix, France
Rietschoten, Jurphaar V., Aix-en-Provence, France
Sabatier, Jean-Marc, Marseilles, France
Institut Pasteur, Paris, France (non-U.S. corporation) Institut National de la Sante et de la Recherche Medicale, Paris, France (non-U.S. government) Centre National de la Recherche Scientifique, Paris, France (non-U.S. government)
US 5221610 19930622
APPLICATION: US 1991-754300 19910904 (7)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Polypeptides encoded by the nef gene of Human Immunodeficiency Virus (HIV), which is the major etiological agent of Acquired Immune Deficiency Syndrome (AIDS), are identified. The polypeptides, a diagnostic method for detecting antibodies to HIV in biological fluids, a diagnostic kit for carrying out the method, and pharmaceutical compositions containing the polypeptides are described. The polypeptides are useful in viral vaccines and for the early detection of HIV infection in humans.
CLM What is claimed is:
1. An in vitro diagnostic method for the diagnosis of HIV infection by the detection of the presence or absence of **antibodies** that bind to an antigen of HIV, wherein said method comprises: containing said antigen with a biological sample, wherein the biological sample is not seropositive for gag and env proteins of HIV, for a time and under conditions sufficient for the antigen and **antibodies** in the biological sample to form an antigen-**antibody** complex; and detecting the formation of the complex; wherein said antigen consists essentially of a peptide having the amino acid sequence: ##STR3##

2. The method of claim 1, wherein said gag or env proteins are selected from the group consisting of **p25**, gp110, and gp41 of HIV.

3. The method of claim 1 or 2, wherein the detecting step further comprises measuring the formation of said antigen-**antibody** complex.

4. The method of claim 1 or 2, wherein said antigen is labeled with an immunoassay label selected from the group consisting of a radioisotope, an enzyme, a fluorescent label, a chemiluminescent label, and a chromphore.

5. The method of claim 1 or 2, wherein the detecting step employs a process selected from the group consisting of Western blot, enzyme

linked immunosorbent assay (ELISA), and indirect immunofluorescent assay.

L7 ANSWER 6 OF 8 USPATFULL on STN
92:63788 Human Immunodeficiency Virus (HIV) associated with Acquired Immunual Deficiency Syndrome (AIDS), a diagnostic method for aids and pre-aids, and a kit therefor.
Montagnier, Luc, Le Plessis Robinson, France
Chermann, Jean-Claude, Elancourt, France
Barre-Sinoussi, Francoise, Issy Les Moulineaux, France
Brun-Vezinet, Francoise, Paris, France
Rouzioux, Christine, Paris, France
Rozenbaum, Willy, Paris, France
Dauguet, Charles, Paris, France
Gruest, Jacqueline, L'Hay Les Roses, France
Nugeyre, Marie-Therese, Paris, France
Rey, Francoise, Paris, France
Axler-Blin, Claudine, Paris, France
Chamaret, Solange, Paris, France
Gallo, Robert C., Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadharan, Mangalasseril G., Vienna, VA, United States
Institut Pasteur, Paris Cedex, France (non-U.S. corporation) The United States of America as represented by the Secretary of The Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 5135864 19920804
APPLICATION: US 1987-117937 19871105 (7)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Retroviruses associated with Acquired Immune Deficiency Syndrome (AIDS), including Lymphadenopathy Associated Virus (LAV), are isolated from the sera of patients afflicted with Lymphadenopathy Syndrome (LAS) or AIDS. LAV is a Human Immunodeficiency Virus (HIV). Viral extract, structural proteins and other fractions of the retrovirus immunologically recognize the sera of such patients. Immunological reaction is used to detect antibodies that specifically bind to antigenic sites of the retrovirus in samples of body fluids from patients with AIDS or risk of AIDS. A kit for in vitro assay of LAS or AIDS is provided.
CLM What is claimed is:
1. A human retrovirus, wherein the retrovirus is Human Immunodeficiency Virus (HIV) in a purified form.

2. An in vitro culture of Human Immunodeficiency Virus (HIV) essentially free of other human retroviruses.

3. An isolate of a retrovirus, which is Human Immunodeficiency Virus (HIV), wherein the isolate comprises one or a mixture of antigens of said retrovirus, wherein said antigens comprise protein, glycoprotein, or a mixture thereof of said retrovirus, and said antigens are immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

4. A suspension of a retrovirus, which is Human Immunodeficiency Virus (HIV), in a buffer therefor, wherein the suspension comprises a mixtue of antigens of said retrovirus, wherein said antigens comprise protein, glycoprotein, or a mixture thereof of said retrovirus, and said antigens are immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

5. A mixture of antigens of Human Immunodeficiency Virus (HIV), wherein said antigens comprise protein, glycoprotein, or a mixture thereof of HIV, and wherein said antigens are in a purified form and are capable of being immunologically recognized by sera of a patient afflicted with

Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

6. An antigen of said mixture as claimed in claim 5, wherein said protein is **p25** protein of HIV.

7. A mixture of structural proteins of Human Immunodeficiency Virus (HIV), wherein said proteins comprise protein, glycoprotein, or a mixture thereof of HIV, and wherein said proteins are in a purified form.

8. A structural protein of said mixture as claimed in claim 7, wherein said protein is envelope protein of HIV.

9. A structural protein of said mixture as claimed in claim 7, wherein said protein is core protein of HIV.

10. A structural protein of said mixture as claimed in claim 7, wherein said protein is p15 protein of HIV.

11. A structural protein of said mixture as claimed in claim 7, wherein said protein is p36 protein of HIV.

12. A structural protein of said mixture as claimed in claim 7, wherein said protein is p42 protein of HIV.

13. A structural protein of said mixture as claimed in claim 7, wherein said protein is p80 protein of HIV.

14. A mixture of labeled antigens of Human Immunodeficiency Virus (HIV), wherein said antigens are capable of being immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS); wherein said antigens comprise protein, glycoprotein, or a mixture thereof of HIV, and wherein said antigens are labeled with an immunoassay label selected from the group consisting of radioisotopes, enzymes, and fluorescent labels.

15. A labeled antigen of said mixture as claimed in claim 14, wherein said labeled antigen is in a purified form.

16. A labeled antigen of said mixture as claimed in claim 14, wherein said label is an enzyme or an enzyme substrate.

17. An extract of a retrovirus, which is Human Immunodeficiency Virus (HIV), wherein said extract comprises one a mixture of antigens of said retrovirus, wherein said antigens comprise protein, glycoprotein, or a mixture thereof of HIV, and said antigens are immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

18. Retroviral extract as claimed in claim 17, wherein said extract comprises **p25** protein of said retrovirus.

19. Retroviral extract as claimed in claim 17, wherein said extract comprises p15 protein of said retrovirus.

20. Retroviral extract as claimed in claim 17, wherein said extract comprises **p25** protein of said retrovirus.

21. Retroviral extract as claimed in claim 17, wherein said extract comprises p36 protein of said retrovirus.

22. Retroviral extract as claimed in claim 17, wherein said extract comprises p80 protein of said retrovirus.

23. Retroviral extract as claimed in claim 17, wherein said extract

comprises antigen that is not immunologically recognized by **antibody** which binds to p24 protein of Human T-Lymphotropic Virus (HTLV-1).

24. Retroviral extract as claimed in claim 17, wherein said extract is free from p19 protein of Human T-Lymphotropic Virus (HTLV-1) when assayed by indirect fluorescence assay using monoclonal **antibody** to said p19 protein.

25. Retroviral lysate as claimed in claim 24, wherein said lysate is enriched in **p25** protein of said retrovirus.

26. Retroviral extract as claimed in claim 17, wherein said retrovirus has the identifying characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-232.

27. Retroviral extract as claimed in claim 17, wherein said retrovirus has the identifying characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-240.

28. Retroviral extract as claimed in claim 17, wherein said retrovirus has the identifying characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-241.

29. An in vitro diagnostic method for the detection of the quantity of the presence or absence of **antibodies** which bind to antigens of a human retrovirus indicative of Acquired Immune Deficiency Syndrome (AIDS) or of Lymphadenopathy-Associated Syndrome (pre-AIDS), wherein said method comprises contacting a lysate enriched in **p25** protein of said retrovirus with a biological fluid for a time and under conditions sufficient for said **p25** protein and **antibodies** in the biological fluid to form antigen-**antibody** complexes; and detecting the formation of said complexes.

30. The method of claim 29, wherein the detecting step further comprises measuring the formation of said antigen-**antibody** complex.

31. The method of claim 30, wherein formation of said antigen-**antibody** complex is measured by ELISA (an enzyme-linked immunoabsorbent assay) or indirect immunofluorescent assay.

32. The method of claim 29, wherein said biological fluid is human sera.

33. The method of claim 29, wherein said biological fluid is from a patient with AIDS.

34. The method of claim 29, wherein said biological fluid is from a patient with pre-AIDS.

35. The method of claim 29, wherein said human retrovirus is selected from the group consisting of Lymphadenopathy Associated Virus, LAV_1 ; Immune Deficiency Associated Virus, $IDAV_1$; and Immune Deficiency Associated Virus, $IDAV_2$.

36. A diagnostic kit for the detection of the presence or absence of **antibodies** which bind to antigens of a human retrovirus indicative of Acquired Immune Deficiency Syndrome (AIDS) or of Lymphadenopathy-Associated Syndrome (pre-AIDS), wherein said kit comprises a lysate enriched in **p25** protein of said retrovirus; a reagent to detect antigen-**antibody** immune complexes that comprise said protein; a biological reference material lacking **antibodies** that immunologically bind with said protein; a comparison sample comprising **antibodies** of said protein; and wherein said **p25** protein and said reagent, biological reference material, and comparison sample are present in an amount sufficient to perform said detection.

37. The diagnostic kit of claim 36, wherein the formation of immune

complexes is detected by employing immunological assays selected from the group consisting of radioimmunoassay, immunoenzymatic assay, and immunofluorescent assay.

38. The retrovirus according to claim 1, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

39. The in vitro culture of Human Immunodeficiency Virus (HIV) according to claim 2, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

40. The isolate of a retrovirus according to claim 3, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

41. The suspension of a retrovirus according to claim 4, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

42. A mixture of antigens of Human Immunodeficiency Virus (HIV) according to claim 5, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

43. Antigen according to claim 6, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

44. Structural protein of Human Immunodeficiency Virus (HIV) according to any one of claims 7 to 9, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

45. Structural protein of Human Immunodeficiency Virus (HIV) according to any one of claims 10 to 13, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

46. A mixture of labeled antigens of Human Immunodeficiency Virus (HIV) according to claim 14, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

47. Retroviral lysate according to claim 25, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

48. The method according to claim 29, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

49. The diagnostic kit according to claim 36, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

L7 ANSWER 7 OF 8 USPATFULL on STN
91:59054 Variant of LAV viruses.
Alizon, Marc, Paris, France
Sonigo, Pierre, Paris, France
Wain-Hobson, Simon, Montigny les Bretonneux, France
Montagnier, Luc, Le Plessis Robinson, France
Institut Pasteur, Paris, France (non-U.S. corporation)
US 5034511 19910723
APPLICATION: US 1987-38332 19870413 (7)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A variant of a LAV virus, designated LAV_{ELI} and capable of causing AIDS. The cDNA and antigens of the LAV_{ELI} virus can be used for the diagnosis of AIDS and pre-AIDS.

CLM What is claimed is:

1. An isolated or synthetic peptide comprising an amino acid sequence that is a fragment of the following amino acid sequence: ##STR1## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, and wherein said fragment comprises at least one amino acid sequence selected from the group consisting of amino-acyl residues 37-130, amino-acyl residues 211-289, amino-acyl residues 488-530, amino-acyl residues 490-620, amino-acyl residues 680-700, amino-acyl residues 1-530, amino-acyl residues 34-530, amino-acyl residues 531-877 of an envelope glycoprotein of LAV_{ELI} virus.

2. An isolated or synthetic peptide as claimed in claim 1, wherein said amino acid sequence comprises a sequence selected from the group consisting of amino-acyl residues 37 to 130, 211 to 289, and 488 to 530.

3. An isolated or synthetic peptide as claimed in claim 1, wherein said amino acid sequence comprises amino-acyl residues 490 to 620 or 680 to 700.

4. An isolated or synthetic peptide as claimed in claim 1, wherein said amino acid sequence comprises a sequence selected from the group consisting of: amino-acyl residues 1 to 530; amino-acyl residues 34 to 530; and amino-acyl residues 531 to 877.

5. An immunogenic composition comprising an isolated or synthetic peptide as claimed in claim 1, and a physiologically acceptable carrier.

6. A diagnostic kit for the in vitro detection of **antibodies** against a lymphadenopathy associated virus comprising an isolated or synthetic peptide as claimed in claim 1, and a reagent for detecting the formation of peptide/**antibody** complex.

7. An isolated or synthetic peptide comprising an amino acid sequence that is a fragment of the following amino acid sequence: ##STR2## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, and wherein said fragment comprises a **p25** peptide comprising amino-acyl residues 138-385 of gag protein of LAV_{ELI}

virus.

8. An isolated or synthetic peptide comprising an amino acid sequence that is a fragment of the following amino acid sequence: ##STR3## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine, and wherein said fragment comprises a p13 peptide comprising amino-acyl residues 385-519 of gag protein of LAV_{ELI} virus.

9. An isolated or synthetic peptide comprising an amino acid sequence: ##STR4## wherein, in said amino acid sequence, A is alanine, C is cysteine, D is aspartic acid, E is glutamic acid, F is phenylalanine, G is glycine, H is histidine, I is isoleucine, K is lysine, L is leucine, M is methionine, N is asparagine, P is proline, Q is glutamine, R is arginine, S is serine, T is threonine, V is valine, W is tryptophan, and Y is tyrosine.

L7 ANSWER 8 OF 8 USPATFULL on STN
89:4517 Retrovirus associated with lymphadenopathies and adapted to continuous lines of lymphoblastoid B cells, capable of producing retrovirus continuously and process for their production.
Montagnier, Luc, Le Plessis Robinson, France
Chamaret, Solange, Paris, France
Gruest, Jacqueline, L'Hay Les Roses, France
Institut Pasteur, Paris, France (non-U.S. corporation)
US 4798797 19890117
APPLICATION: US 1986-922764 19861024 (6)
PRIORITY: FR 1984-7151 19840509
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A retrovirus B-LAV associated with lymphadenopathies and with Acquire Immune Deficiency Syndrome, being adapted to B lymphocytes and capable of being continuously produced by continuous cell lines of B lymphoblastoid cells; continuous cell lines of B lymphoblastoid cells which produce the B-LAV retrovirus and a process for producing such cell lines are disclosed.
CLM What is claimed is:
1. A continuous cell line from a culture of human B lymphoblastoid cells, wherein the cells have the following characteristics: (a) Lymphadenopathy Associated Virus (LAV) is not cytotoxic to the cells; (b) When the cells are cultured, supernatant from the cells exhibits reverse transcriptase activity; (c) The cells do not immunologically react with monoclonal **antibodies** to Leu-3 cells; (d) When the cells are cultured in the absence of T cell growth factor (TCGF), infected cells continuously produce B-LAV retrovirus, which is a retrovirus having the essential antigenic characteristics of LAV.

2. Cell line as claimed in claim 1, wherein the cells do not contain the genome of Epstein-Barr virus (EBV).

3. Cell line as claimed in claim 1, wherein the cells contain at least part of the genome of Epstein-Barr virus (EBV).

4. Cell line as claimed in claim 1, wherein the cells are derived from a Burkitt lymphoma.

5. Cell line as claimed in claim 1, wherein the cells contain Epstein-Barr nuclear antigen (EBNA).

6. A process for producing a continuous cell line of B lymphoblastoid cells, wherein the process comprises: (a) providing a cell culture

medium comprising human B lymphocytes; (b) contacting the B lymphocytes in the culture medium with an oncogenic transforming agent under conditions to form a continuous cell line of transformed B lymphoblastoid cells; and (c) contacting the transformed B lymphoblastoid cells with Lymphadenopathy Associated Virus (LAV) under conditions in which the transformed B lymphoblastoid cells are infected with LAV; wherein the B lymphoblastoid cells after infection with LAV produce B-LAV, which is a retrovirus having the essential antigenic characteristics of LAV.

7. A process as claimed in claim 6, wherein the transformed B lymphoblastoid cells are subject to multiple infections with LAV.

8. A process for producing a continuous cell line of B lymphoblastoid cells, wherein the process comprises: (a) providing a cell culture medium comprising a mixture of human T lymphocytes and human B lymphocytes; (b) contacting the T lymphocytes and B lymphocytes in the culture medium with Epstein-Barr virus as a transforming agent under conditions to form a continuous cell line of transformed B lymphoblastoid cells; and (c) contacting the transformed B lymphoblastoid cells with Lymphadenopathy Associated Virus (LAV) under conditions in which the transformed B lymphoblastoid cells are infected with LAV; wherein the B lymphoblastoid cells after infection with LAV produce B-LAV, which is a retrovirus having the essential antigenic characteristics of LAV.

9. A process as claimed in claim 8, wherein the transformed B lymphoblastoid cells are subject to multiple infections with LAV.

10. A process for producing a continuous cell line of B lymphoblastoid cells, wherein the process comprises: (a) providing a cell culture medium comprising a mixture of human T lymphocytes and human B lymphocytes; (b) contacting the T lymphocytes and B lymphocytes with a mitogen under conditions to facilitate blastic transformation of the B lymphocytes; (c) contacting the lymphocytes from step (b) with Epstein-Barr virus (EBV) as a transforming agent under conditions to form a continuous cell line of transformed B lymphoblastoid cells; (d) contacting the transformed B-lymphoblastoid cells with Lymphadenopathy Associated Virus (LAV) under conditions in which the transformed cells are infected with LAV; and (e) cultivating the resulting LAV-infected cells to obtain a sustained level of reverse transcriptase activity in the culture; wherein the B lymphoblastoid cells after infection with LAV produce B-LAV, which is a retrovirus having the essential antigenic characteristics of LAV.

11. A process as claimed in claim 10, wherein the transformed B lymphoblastoid cells are subject to multiple infections with LAV.

12. Process as claimed in claim 11, wherein the T lymphocytes and the B lymphocytes are from the same human donor.

13. Process as claimed in claim 11, wherein the nitrogen is Protein A of Staphylococcus Aureus.

14. Process as claimed in claim 11, which comprises the additional steps of: cultivating the LAV-infected B lymphoblastoid cells with T cell growth factor (TCGF) to obtain a culture medium that exhibits reverse transcriptase activity; after reverse transcriptase activity declines, contacting the culture medium with fresh T lymphocytes to proliferate viral infection; and cultivating the resulting cells under conditions to obtain a sustained level of reverse transcriptase activity in the culture medium.

15. Process as claimed in claim 14, wherein all of the lymphocytes are from the same human donor.

16. Process as claimed in claim 15, wherein the fresh lymphocytes are activated with phytohemaglutinin prior to contact with the culture medium.

17. Process as claimed in claim 15, wherein the B lymphocytes are derived from umbilical cord lymphocytes.

18. Process as claimed in claim 11, wherein the B lymphocytes are derived from a Burkitt lymphoma.

19. A retrovirus termed B-LAV, which is comprised of antigen and the antigen is immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS), and wherein the retrovirus: (a) exhibits reverse transcriptase activity with a strong affinity for poly(adenylate-oligodeoxy-thymidylate) [poly(A)-oligo$(dT)_{12-18}$] with Mg^{2+}; (b) exhibits tropism for T-lymphocytes; (c) exhibits preferential tropism for Leu-3 cells; (d) is cytopathic to Leu-3 cells infected with the retrovirus; (e) induces the production of **p25** viral protein of Lymphadenopathy Associated Virus (LAV) in T-lymphocytes infected with LAV; (f) exhibits slight antigenic homology with the virus of infectious anemia of the horse (VAIC), in that **antibody** against VAIC immunoprecipitates **p25** viral protein of LAV; and (g) is capable of infecting continuous B lymphoblastoid cell lines having C.N.C.M. Deposit Accession Nos. I-300, I-301, I-302, and I-303, and of being replicated by said cell lines when cultured; wherein the retrovirus is in biologically pure form.

20. Retrovirus as claimed in claim 19, wherein the retrovirus has an average diameter of 139 nanometers and an eccentric nucleus having an average diameter of 41 nanometers.

21. A method of amplifying a retrovirus, wherein the retrovirus is B-LAV, said method comprising: (a) contacting a continuous cell line of human B lymphoblastoid cells as claimed in claim 19 with B-LAV; and (b) culturing the cells in suspension in the absence of T cell growth factor (TCGF) and under conditions in which the retrovirus proliferates.

22. Method as claimed in claim 21, wherein the method includes the further step of separating B-LAV from the cultured cells in step (b).

23. Method as claimed in claim 21, wherein the cell line has the identifying characteristics of C.N.C.M. Deposit Accession No. I-300.

24. Method as claimed in claim 21, wherein the cell line has the identifying characteristics of C.N.C.M. Deposit Accession No. I-301.

25. Method as claimed in claim 21, wherein the cell line has the identifying characteristics of C.N.C.M. Deposit Accession No. I-302.

26. Method as claimed in claim 21, wherein the cell line has the identifying characteristics of C.N.C.M. Deposit Accession No. I-303.

27. A retrovirus having the identifying characteristics of C.N.C.M. Deposit Accession No. I-299.

28. A continuous cell line of human B lymphoblastoid cells having the identifying characteristics of C.N.C.M. Deposit Accession No. I-300.

29. A continuous cell line of human B lymphoblastoid cells having the identifying characteristics of C.N.C.M. Deposit Accession No. I-301.

30. A continuous cell line of human B lymphoblastoid cells having the identifying characteristics of C.N.C.M. Deposit Accession No. I-302.

31. A continuous cell line of human B lymphoblastoid cells having the

identifying characteristics of C.N.C.M. Deposit Accession No. I-303.

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=> d his

     (FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004)

     FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
                E MONTAGNIER LUC/IN
L1             99 S E3
L2             65 S L1 AND (ANTIBOD?/CLM)
L3             10 S L2 AND (P12/CLM)
L4              5 S L2 AND (P18/CLM)
L5              3 S L4 NOT L3
L6             13 S L2 AND (P25/CLM)
L7              8 S L6 NOT (L3 OR L5)

=> e luciw paul/in
E1              1      LUCIVERO MICHAEL/IN
E2              1      LUCIW FRED W/IN
E3              2 --> LUCIW PAUL/IN
E4              7      LUCIW PAUL A/IN
E5             10      LUCIW WILLIAM W/IN
E6              1      LUCIW WOLODYMYR/IN
E7              1      LUCK AARON JOHN/IN
E8             13      LUCK ALLAN J/IN
E9              4      LUCK ANDREAS/IN
E10             2      LUCK ARTHUR J/IN
E11             1      LUCK BILL/IN
E12             3      LUCK CHRISTOPHER F/IN

=> s e3-e4
                2 "LUCIW PAUL"/IN
                7 "LUCIW PAUL A"/IN
L8              9 ("LUCIW PAUL"/IN OR "LUCIW PAUL A"/IN)

=> s l8 and (antibod?)
           97709 ANTIBOD?
L9              9 L8 AND (ANTIBOD?)

=> s l9 and (p12)
            5707 P12
L10             5 L9 AND (P12)

=> d l10,cbib,ab,clm,1-5

L10  ANSWER 1 OF 5  USPATFULL on STN
2003:67649 Methods for detecting human immunodeficiency virus nucleic acid.
     Luciw, Paul A., Davis, CA, United States
     Dina, Dino, Oakland, CA, United States
     Chiron Corporation, Emeryville, CA, United States (U.S. corporation)
     US 6531276 B1 20030311
     APPLICATION: US 1995-403588  19950314 (8)
     DOCUMENT TYPE: Utility; GRANTED.
CAS  INDEXING IS AVAILABLE FOR THIS PATENT.
AB       Polynucleotide sequences are provided for the diagnosis of the presence
         of retroviral infection in a human host associated with lymphadenopathy
         syndrome and/or acquired immune deficiency syndrome, for expression of
         polypeptides and use of the polypeptides to prepare antibodies, where
         both the polypeptides and antibodies may be employed as diagnostic
         reagents or in therapy, e.g., vaccines and passive immunization. The
         sequences provide detection of the viral infectious agents associated
         with the indicated syndromes and can be used for expression of antigenic
         polypeptides.
CLM      What is claimed is:
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1. A method for detecting the presence of a polynucleotide comprising a human immunodeficiency virus (HIV) genomic sequence in a nucleic acid sample obtained from a physiological sample, which method comprises the steps of: (a) combining said nucleic acid sample with a single-stranded nucleic acid probe comprising a sequence of at least about 20 contiguous bases selected from the nucleotide sequence shown in FIG. 4 and complementary to said HIV genomic sequence comprised in said polynucleotide, said probe not forming a duplex with HTLV-I and -II nucleic acid sequences under conditions of stringency for hybridization under which said probe forms a duplex with said polynucleotide; and (b) determining duplex formation between said probe and nucleic acid present in said sample.

2. The method of claim 1 wherein the probe sequence is complementary to a sequence which is part of the gag, pol or env open reading frame.

3. The method of claim 2 wherein the probe sequence is complementary to a sequence which is part of the gag open reading frame.

4. The method of claim 2 wherein the probe is complementary to a sequence which is part of the pol open reading frame.

5. The method of claim 1 wherein the probe comprises RNA.

6. The method of claim 1 wherein the probe comprises DNA.

7. The method of claim 2 wherein the probe comprises RNA.

8. The method of claim 2 wherein the probe comprises DNA.

9. A method comprising the steps of: (a) providing a sample suspected of containing a polynucleotide; (b) providing a single-stranded nucleic acid of 20-100 bases comprising a sequence of bases of at least 20 contiguous bases selected from the gag, env, or pol open reading frames of FIG. 4 or the complement thereof, wherein the gag open reading frame extends from nucleotide 792 to 2298 of FIG. 4, wherein the env open reading frame extends from nucleotide 6235 to 8799 of FIG. 4, and wherein the pol open reading frame extends from nucleotide 2967 to 5103 of FIG. 4; and (c) combining said sample and said single-stranded nucleic acid under hybridization conditions that (i) permit duplex formation between said single-stranded nucleic acid and either strand of viral DNA from a lambda bacteriophage selected from the group consisting of ATCC Accession no. 40143 and 40144, but (ii) do not permit duplex formation with either HTLV-I or HTLV-II genomic sequences.

10. The method of claim 9 wherein contiguous bases are from the gag ORF of FIG. 4 or the complement thereof.

11. The method of claim 9 wherein said contiguous bases are from the env ORF of FIG. 4 or the complement thereof.

12. The method of claim 9 wherein said contiguous bases are from the pol ORF of FIG. 4 or the complement thereof.

13. The method of any of claims 9-12 wherein said single-stranded nucleic acid comprises RNA.

14. The method of any of claims 9-12 wherein said single-stranded nucleic acid comprises DNA.

15. The method of claim 13 wherein said single-stranded nucleic acid further comprises a label.

16. The method of claim 14 wherein said single-stranded nucleic acid further comprises a label.

17. The method of claim 13 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

18. The method of claim 14 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

19. The method of claim 15 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

20. The method of claim 16 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

21. The method of claim 10 wherein said single-stranded nucleic acid comprises RNA and wherein said contiguous bases are within the p25 gag region shown in FIG. 4 or the complement thereof, wherein the p25 gag region extends from nucleotides 1194 to 1253 of FIG. 4.

22. The method of claim 10 wherein said single-stranded nucleic acid comprises DNA and wherein said contiguous bases are within the p25 gag region shown in FIG. 4 or the complement thereof, wherein the p25 gag region extends from nucleotides 1194 to 1253 of FIG. 4.

23. The method of claim 21 wherein said single-stranded nucleic acid further comprises a label.

24. The method of claim 22 wherein said single-stranded nucleic acid further comprises a label.

25. The method of claim 21 or 23 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

26. The method of claim 22 or 24 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

27. The method of claim 10 wherein said single-stranded nucleic acid comprises RNA and wherein said contiguous bases are within the p18 gag region shown in FIG. 4 or the complement thereof, wherein the p18 gag region extends from nucleotides 1929 to 2018 of FIG. 4.

28. The method of claim 10 wherein said single-stranded nucleic acid comprises DNA and wherein said contiguous bases are within the p18 gag region shown in FIG. 4 or the complement thereof, wherein the p18 gag region extends from nucleotides 1929 to 2018 of FIG. 4.

29. The method of claim 27 wherein said single-stranded nucleic acid further comprises a label.

30. The method of claim 28 wherein said single-stranded nucleic acid further comprises a label.

31. The method of claim 27 or 29 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

32. The method of claim 28 or 30 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

33. The method of claim 12 wherein said single-stranded nucleic acid comprises RNA and wherein said contiguous bases are within the 3659 hpa1 and 5131 ndel restriction fragment shown in FIG. 4 or the complement thereof.

34. The method of claim 12 wherein said single-stranded nucleic acid comprises DNA and wherein said contiguous bases are within the 3659 hpa1 and 5131 ndel restriction fragment shown in FIG. 4 or the complement thereof.

35. The method of claim 33 wherein said single-stranded nucleic acid further comprises a label.

36. The method of claim 34 wherein said single-stranded nucleic acid further comprises a label.

37. The method of claim 33-36 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

38. The method of claim 10 wherein said single-stranded nucleic acid comprises RNA and wherein said contiguous bases are within the 1346 aha111 and 1636 bstXI restriction fragment shown in FIG. 4 or the complement thereof.

39. The method of claim 10 wherein said single-stranded nucleic acid comprises DNA and wherein said contiguous bases are within the 1346 aha111 and 1636 bstXI restriction fragment shown in FIG. 4 or the complement thereof.

40. The method of claim 10 wherein said single-stranded nucleic acid further comprises a label.

41. The method of claim 39 wherein said single-stranded nucleic acid further comprises a label.

42. The method of claim 38-41 wherein said single-stranded nucleic acid is chemically synthesized at least in part.

43. The method of claims 9-12, 21-24, 27-30, 33-36, or 38-41 wherein said sample is a human sample.

44. The method of claim 43 wherein said human sample is blood, lymph or saliva.

45. The method of claims 9-12 wherein said sample is blood, lymph or saliva.

L10 ANSWER 2 OF 5 USPATFULL on STN
2002:254168 HIV immunoassays using gag polypeptides.
Luciw, Paul A., Davis, CA, United States
Dina, Dino, San Francisco, CA, United States
Steimer, Kathelyn, El Cerrito, CA, United States
Pescador, Ray Sanchez, Oakland, CA, United States
George-Nascimento, Carlos, Danville, CA, United States
Parkes, Deborah, Oakland, CA, United States
Hallewell, Rob, San Francisco, CA, United States
Barr, Philip J., Orinda, CA, United States
Truett, Martha, Oakland, CA, United States
Chiron Corporation, Emeryville, CA, United States (U.S. corporation)
US 6458527 B1 20021001
APPLICATION: US 1993-83391 19930628 (8)
DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Polynucleotide sequences are provided for the diagnosis of the presence of retroviral infection in a human host associated with lymphadenopathy syndrome and/or acquired immune deficiency syndrome, for expression of polypeptides and use of the polypeptides to prepare **antibodies**, where both the polypeptides and **antibodies** may be employed as diagnostic reagents or in therapy, e.g., vaccines and passive immunization. The sequences provide detection of the viral infectious agents associated with the indicated syndromes and can be used for expression of antigenic polypeptides.
CLM What is claimed is:
1. In an immunoassay to detect the presence of **antibodies** to a human immunodeficiency virus (HIV) in a human sample comprising contacting

said sample with an HIV gag antigen capable of binding anti-HIV **antibodies** in AIDS patient sera and determining whether **antibodies** are bound to said gag antigen, the improvement comprising employing as said gag antigen either a synthetic polypeptide or a recombinant polypeptide, wherein said gag antigen comprises an amino acid sequence of at least 7 contiguous amino acids selected from the gag ORF shown in FIG. 4, and wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transcription and translation initiation and termination regulatory sequences functional in said cellular hosts.

2. A method of detecting **antibodies** to a human immunodeficiency virus (HIV) in a human sample comprising: (a) providing a solid support having bound thereto a polypeptide comprising an amino acid sequence of a least 7 contiguous amino acids selected from the gag ORF shown in FIG. 4, wherein said amino acid sequence is capable of binding to anti-HIV **antibodies** in AIDS patient sera, wherein said polypeptide is either a synthetic polypeptide or a recombinant polypeptide, wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transcription and translation initiation and termination regulatory sequences functional in said hosts; (b) contacting said solid support with said human sample to provide a sample-contacted support; (c) washing said sample-contacted support to provide a washed support; and (d) determining whether human **antibodies** are bound to said washed support.

3. The method of claim 1 wherein said cellular hosts are microorganisms.

4. The method of claim 2 wherein said cellular hosts are microorganisms.

5. The method of claim 3 wherein said microorganisms are E. coli.

6. The method of claim 4 wherein said microorganisms are E. coli.

7. The method of claim 3 wherein said microorganisms are S. cerevisiae.

8. The method of claim 2 wherein said microorganisms are S. cerevisiae.

9. The method of claim 1 wherein said cellular hosts are mammalian cells.

10. The method of claim 2 wherein said cellular hosts are mammalian cells.

11. The method of claim 1 wherein said gag antigen is not glycosylated.

12. The method of claim 2 wherein said polypeptide is not glycosylated.

13. The method of claim 1 wherein said human sample comprises serum.

14. The method of claim 2 wherein said human sample comprises serum.

15. The method of claim 2 wherein step (d) comprises contacting said washed support with labeled **antibodies** to human Ig and the specific binding of said labeled **antibodies** to said washed support is measured.

16. The method of claim 15 wherein said labeled **antibodies** bound to said washed support are measured by an enzyme label.

17. The method of claim 1 wherein said gag antigen is selected from the group consisting of p25gag, p16gag, and p53gag.

18. The method of claim 2 wherein said contiguous amino acid sequence is

selected from the group consisting of p25gag, p16gag, and p53gag shown in FIG. 4.

19. An article of manufacture adapted for use in an immunoassay for **antibodies** to a human immunodeficiency virus (HIV) comprising a solid support having bound thereto a polypeptide comprising an amino acid sequence of at least 7 contiguous amino acids selected from the gag ORF shown in FIG. 4, wherein said amino acid sequence is capable of binding to anti-HIV **antibodies** in AIDS patient sera, wherein said polypeptide is either a synthetic polypeptide or a recombinant polypeptide, wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transcription and translation initiation and termination regulatory sequences functional in said cellular hosts.

20. The article of manufacture of claim 19 wherein said gag antigen is not glycosylated.

21. The article of manufacture of claim 19 wherein said cellular hosts are microorganisms.

22. The article of manufacture of claim 21 wherein said microorganisms are E. coli.

23. The article of manufacture of claim 21 wherein said microorganisms are S. cerevisiae.

24. The article of manufacture of claim 19 wherein said cellular hosts are mammalian cells.

25. The method of claim 1 wherein said gag antigen is a synthetic polypeptide.

26. A polypeptide prepared by chemical synthesis comprising an amino acid sequence of at least 7 contiguous amino acids selected from the gag ORF shown in FIG. 4, wherein said amino acid sequence is capable of binding to anti-HIV **antibodies** in AIDS patient sera.

27. The immunoassay of claim 1 wherein said contiguous amino acid sequence is at least 15 amino acid residues.

28. The method of claim 2 wherein said contiguous amino acid sequence is at least 15 amino acid residues.

29. The method of claim 12 wherein said contiguous amino acid sequence is at least 15 amino acid residues.

30. The method of claim 18 wherein said contiguous amino acid sequence is at least 15 amino acid residues.

31. The article of manufacture of claim 19 wherein said contiguous amino acid sequence is at least 15 amino acid residues.

32. The article of manufacture of claim 25 wherein said contiguous amino acid sequence is at least 15 amino acid residues.

33. The polypeptide of claim 26 wherein said contiguous amino acid sequence is at least 15 amino acid residues.

L10 ANSWER 3 OF 5 USPATFULL on STN
2000:4595 Immunoassay of HIV **antibodies** using recombinant or synthetic selected pol sequence.
Luciw, Paul A., Davis, CA, United States
Dina, Dino, San Francisco, CA, United States

Chiron Corporation, Emeryville, CA, United States (U.S. corporation)
US 6013432 20000111
APPLICATION: US 1995-443434 19950517 (8)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Polynucleotide sequences are provided for the diagnosis of the presence of retroviral infection in a human host associated with lymphadenopathy syndrome and/or acquired immune deficiency syndrome, for expression of polypeptides and use of the polypeptides to prepare **antibodies**, where both the polypeptides and **antibodies** may be employed as diagnostic reagents or in therapy, e.g., vaccines and passive immunization. The sequences provide detection of the viral infectious agents associated with the indicated syndromes and can be used for expression of antigenic polypeptides.
CLM What is claimed is:

1. In an immunoassay to detect the presence of **antibodies** to a human immunodeficiency virus (HIV) in a human sample comprising contacting said sample with an antigen, and determining whether **antibodies** are bound to said antigen, the improvement comprising employing at least an immunogenic fragment of a pal polypeptide antigen of said HIV having an amino acid sequence which is encoded by the DNA sequence set forth in FIG. 4, between the BstXI site at position 3006 and the Nde I site at position 5131, which sequence is immunologically non-cross-reactive with HTLV-I and HTLV-II, said antigen being either a recombinant polypeptide or a synthetic polypeptide, wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transcription and translation initiation and termination regulatory sequences functional in said cellular hosts.

2. The method of claim 1 wherein said cellular hosts are microorganisms.

3. The method of claim 2 wherein said microorganisms are E. coli.

4. The method of claim 2 wherein said microorganisms are S. cerevisiae.

5. The method of claim 1 wherein said cellular hosts are mammalian cells.

6. The method of claim 1 wherein said human sample comprises serum.

7. The method of claim 1 wherein said antigen is p31.

8. A method of detecting **antibodies** to a human immunodeficiency virus (HIV) in a human sample comprising: (a) providing a solid support having bound thereto a polypeptide comprising at least an immunogenic portion of a pol polypeptide antigen of said HIV having an amino acid sequence which is encoded by the DNA sequence set forth in FIG. 4, between the BstXI site at position 3006 and the Nde I site at position 5131, wherein said antigen is either a recombinant polypeptide or a synthetic polypeptide, wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transcription and translation initiation and termination regulatory sequences functional in said hosts; (b) contacting said solid support with said human sample to provide a sample-contacted support; (c) washing said sample-contacted support to provide a washed support; and (d) determining whether human **antibodies** are bound to said washed support.

9. The method of claim 8 wherein said cellular hosts are microorganisms.

10. The method of claim 9 wherein said microorganisms are E. coli.

11. The method of claim 9 wherein said microorganisms are S. cerevisiae.

12. The method of claim 8 wherein said cellular hosts are mammalian cells.

13. The method of claim 8 wherein said human sample comprises serum.

14. The method of claim 8 wherein step (d) comprises contacting said washed support with labeled **antibodies** to human Ig and the specific binding of said labeled **antibodies** to said washed support is measured.

15. The method of claim 14 wherein said labeled **antibodies** bound to said washed support are measured by an enzyme label.

16. The method claim 8 wherein said antigen is p31.

17. The method of claim 8 wherein said polypeptide antigen has at least 15 amino acids.

18. A composition adapted for use in an immunoassay to **antibodies** to a human immunodeficiency virus (HIV) comprising a solid support having bound thereto a polypeptide comprising at least an immunogenic portion of a pol polypeptide antigen of said HIV having an amino acid sequence which is encoded by the DNA sequence as set forth in FIG. 4, between the BstXI site at position 3006 and the Nde I site at position 5131, wherein said antigen is either a recombinant polypeptide or a synthetic polypeptide, wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transcription and translation initiation and termination regulatory sequences functional in said cellular hosts.

19. The composition of claim 18 wherein said cellular hosts are microorganisms.

20. The composition of claim 19 wherein said microorganisms are E. coli.

21. The composition of claim 19 wherein said microorganisms are S. cerevisiae.

22. The composition of claim 18 wherein said cellular hosts are mammalian cells.

23. The composition of claim 18 wherein said polypeptide antigen has at least 15 amino acids.

24. A synthetic antigenic human immunodeficiency virus (HIV) polypeptide which has an amino acid sequence which is encoded by the DNA sequence set forth in FIG. 4, between the BsXI site at position 3006 and the Nde I site at position 5131.

25. The polypeptide of claim 24 which has at least 15 amino acids.

L10 ANSWER 4 OF 5 USPATFULL on STN
97:106975 Vector for expression of a polypeptide in a mammalian cell.
Luciw, Paul A., Davis, CA, United States
Dina, Dino, San Francisco, CA, United States
Rosenberg, Steven, Oakland, CA, United States
Chapman, Barbara S., Berkeley, CA, United States
Thayer, Richard M., Alamo, CA, United States
Haigwood, Nancy L., Bellevue, WA, United States
Chiron Corporation, Emeryville, CA, United States (U.S. corporation)
US 5688688 19971118
APPLICATION: US 1994-288336 19940810 (8)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polynucleotide sequences are provided for the diagnosis of the presence of retroviral infection in a human host associated with lymphadenopathy syndrome and/or acquired immune deficiency syndrome, for expression of polypeptides and use of the polypeptides to prepare **antibodies**, where both the polypeptides and **antibodies** may be employed as diagnostic reagents or in therapy, e.g., vaccines and passive immunization. The sequences provide detection of the viral infectious agents associated with the indicated syndromes and can be used for expression of antigenic polypeptides.

CLM What is claimed is:

1. A vector for expression of a polypeptide in a mammalian cell comprising a first polynucleotide sequence that comprises: a) an upstream SV40 origin of replication; b) a downstream SV40 polyadenylation region; and c) a transcription regulatory region from human cytomegalovirus immediate early region HCMV IE1, wherein the transcription regulatory region includes the first HCMV IE1 intron proximal to the 3' end of the HCMV IE1 promoter, is interposed between the SV40 origin of replication and the SV40 polyadenylation region, and is capable of directing the transcription of a polypeptide coding sequence operably linked downstream from the transcription regulatory region.

2. The vector of claim 1, wherein the polynucleotide sequence further comprises a linker that comprises a restriction site for insertion of the coding region of a polypeptide.

3. The vector of claim 2, wherein the restriction site is a SalI site.

4. The vector of claim 1, wherein the SV40 polyadenylation region comprises the SV40 polyadenylation sequence present in plasmid pSV7d.

5. The vector of claim 1, wherein the SV40 origin of replication comprises the SV40 origin of replication sequence present in plasmid pSVT2.

6. The vector of claim 1, further comprising a selectable marker.

7. The vector of claim 5, wherein the selectable marker is a polynucleotide sequence that encodes ampicillin resistance.

8. The vector of claim 1, further comprising a bacterial origin of replication.

9. The vector of claim 1, wherein the polynucleotide sequence comprises the HCMV sequences present in plasmid pCMV6ARV120tpa, ATCC Accession No: 68249.

10. The vector of claim 2, further comprising a coding region that encodes a polypeptide, inserted at the restriction site.

11. The vector of claim 10, further comprising a region encoding a signal sequence effective in directing the secretion of the polypeptide encoded by the coding region, positioned upstream from the coding region.

12. The vector of claim 11, wherein the signal sequence is derived from the human tissue plasminogen activator leader sequence.

13. A vector produced by the process comprising linking together in an operative manner: a) a SV40 origin of replication; b) a SV40 polyadenylation region; and c) a transcription regulatory region from human cytomegalovirus immediate early region HCMV IE1, wherein said regulatory region includes the first HCMV IE1 intron proximal to the 3' end of the HCMV IE1 promoter and is capable of directing the transcription of a polypeptide coding sequence operably linked downstream therefrom.

14. The vector of claim 13, wherein the vector is arranged in the same manner as plasmid pCMV6a.

15. A method for producing a vector for expression of a polypeptide in a mammalian cell comprising: a) providing a first polynucleotide molecule that comprises a SV40 origin of replication; b) providing a second polynucleotide molecule that comprises a SV40 polyadenylation region; c) providing a third polynucleotide molecule that comprises a transcription regulatory region from human cytomegalovirus immediate early region HCMV IE1, wherein said regulatory region includes the first HCMV IE1 intron proximal to the 3' end of the HCMV IE1 promoter; and d) linking the SV40 origin of replication, the SV40 polyadenylation region and the regulatory region from HCMV IE1 together to form a vector that is capable of effecting the transcription of a polypeptide coding sequence operatively linked downstream from the regulatory region.

16. A method for producing the vector of claim 1, comprising introducing the vector into a host cell and allowing the host cell to generate a plurality of said vectors.

17. An isolated nucleic acid molecule comprising an enhanced promoter, wherein the enhanced promoter comprises the human cytomegalovirus immediate early region HCMV IE1 promoter and the first intron proximate to the 3' end of the HCMV IE1 promoter.

18. The nucleic acid molecule of claim 17, wherein the promoter region is derived from a subclone of human cytomegalovirus (Towne strain).

19. A vector for expression of a polypeptide in a mammalian cell, comprising the nucleic acid molecule of claims 17, wherein the nucleic acid molecule is capable of directing the transcription of a polypeptide coding sequence operably linked downstream of the nucleic acid molecule.

20. The vector of claim 19, further comprising an origin of replication operably linked upstream of the nucleic acid molecule.

21. The vector of claim 19, further comprising a polyadenylation region operably linked downstream of the nucleic acid molecule.

22. A vector for expression of a polypeptide in a mammalian cell, comprising: a) an upstream origin of replication; b) a downstream polyadenylation region; and c) the nucleic acid molecule of claim 17 interposed between the origin of replication and the polyadenylation region, wherein the enhanced promoter region is capable of directing the transcription of a polypeptide coding sequence operably linked downstream from the promoter region.

23. A method for constructing the vector of claim 19, comprising operatively linking together the nucleic acid molecule and the polypeptide coding sequence.

24. A method for producing the vector constructed in claim 23, comprising introducing the vector into a host cell that is capable of replicating the vector and allowing the host cell to replicate the vector.

L10 ANSWER 5 OF 5 USPATFULL on STN
92:86879 Immunoassays for **antibody** to human immunodeficiency virus using recombinant antigens.
Luciw, Paul A., Davis, CA, United States
Dina, Dino, San Francisco, CA, United States
Chiron Corporation, Emeryville, CA, United States (U.S. corporation)
US 5156949 19921020
APPLICATION: US 1987-138894 19871224 (7)

DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polynucleotide sequences are provided for the diagnosis of the presence of retroviral infection in a human host associated with lymphadenopathy syndrome and/or acquired immune deficiency syndrome, for expression of polypeptides and use of the polypeptides to prepare **antibodies**, where both the polypeptides and **antibodies** may be employed as diagnostic reagents or in therapy, e.g., vaccines and passive immunization. The sequences provide detection of the viral infectious agents associated with the indicated syndromes and can be used for expression of antigenic polypeptides.

CLM What is claimed is:

1. In an immunoassay to detect the presence of **antibodies** to a human immunodeficiency virus (HIV) in a human sample comprising contacting said sample with an immunogenic polypeptide comprising an amino acid sequence from the envelope (env) domain of said HIV and determining whether **antibodies** are bound to said immunogenic polypeptide, the improvement comprising employing as said immunogenic polypeptide a recombinant polypeptide that is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transciptional and translational initiation and termination regulatory sequences functional in said cellular hosts.

2. A method of detecting **antibodies** to a human immunodeficiency virus (HIV) in a human sample comprising: a) providing a solid support having bound thereto a recombinant polypeptide comprising at least an immunogenic portion of the envelope (env) domain of said HIV, wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transciptional and translation initiation and termination regulatory sequences functional in said cellular hosts; b) contacting said solid support with said human sample to provide a sample-contacted support; c) washing said sample-contacted support to provide a washed support; and d) determining whether human **antibodies** are bound to said washed support.

3. The method claim 1 wherein said cellular hosts are microorganisms.

4. The method claim 2 wherein said cellular hosts are microorganisms.

5. The method of claim 3 wherein said microorganisms are E. coli.

6. The method of claim 4 wherein said microorganisms are E. coli.

7. The method of claim 3 wherein said microorganisms are S. cerevisiae.

8. The method of claim 4 wherein said microorganisms are S. cerevisiae.

9. The method of claim 1 wherein said cellular hosts are mammalian cells.

10. The method of claim 2 wherein said cellular hosts are mammalian cells.

11. The method of claim 1 wherein said recombinant polypeptide is not glycosylated.

12. The method of claim 2 wherein said recombinant polypeptide is not glycosylated.

13. The method of claim 1 wherein said human sample comprises serum.

14. The method of claim 2 wherein said human sample comprises serum.

15. The method of claim 2 wherein step (d) comprises contacting said washed support with labeled **antibodies** to human Ig and the specific binding of said labeled **antibodies** to said washed support is measured.

16. The method of claim 15 wherein said labeled **antibodies** bound to said washed support are measured by an enzyme label.

17. An article of manufacture adapted for use in an immunoassay for **antibodies** to a human immunodeficiency virus (HIV) comprising a solid support having bound thereto a recombinant polypeptide comprising at least an immunogenic portion of the envelope (env) domain of said HIV, wherein said recombinant polypeptide is the expression product of cellular hosts transformed by a heterologous expression vector comprising a DNA sequence encoding said recombinant polypeptide under the control of transciptional and translation initiation and terminator regulatory sequences functional in said cellular hosts.

18. The article of manufacture of claim 17 wherein said recombinant polypeptide is not glycosylated.

19. The article of manufacture of claim 17 wherein said cellular hosts are microorganisms.

20. The article of manufacture of claim 19 wherein said microorganisms are E. coli.

21. The article of manufacture of claim 19 wherein said microorganisms are S. cerevisiae.

22. The article of manufacture of claim 17 wherein said cellular hosts are mammalian cells.

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=> d his

     (FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004)

     FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
                E MONTAGNIER LUC/IN
L1           99 S E3
L2           65 S L1 AND (ANTIBOD?/CLM)
L3           10 S L2 AND (P12/CLM)
L4            5 S L2 AND (P18/CLM)
L5            3 S L4 NOT L3
L6           13 S L2 AND (P25/CLM)
L7            8 S L6 NOT (L3 OR L5)
                E LUCIW PAUL/IN
L8            9 S E3-E4
L9            9 S L8 AND (ANTIBOD?)
L10           5 S L9 AND (P12)

=> s l9 and p18
         2484 P18
L11         1 L9 AND P18

=> s l11 not l10
L12         0 L11 NOT L10

=> s l9 and p25
         2295 P25
L13         6 L9 AND P25

=> s l13 not l10
L14         1 L13 NOT L10
```

=> d l14,cbib,ab,clm

L14 ANSWER 1 OF 1 USPATFULL on STN
1999:166840 Recombinant live feline immunodeficiency virus and proviral DNA vaccines.
Luciw, Paul A., Davis, CA, United States
Sparger, Ellen E., Dixon, CA, United States
The Regents of the University of California, Oakland, CA, United States (U.S. corporation)
US 6004799 19991221
APPLICATION: US 1997-811828 19970305 (8)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention discloses live-attenuated feline immunodeficiency virus (FIV), and recombinant vectors for producing them, useful as vaccines and therapeutic agents against FIV and diseases associated with virulent FIV infection. In the recombinant vectors and FIVs, one or more genes, or part of the gene(s), responsible for FIV pathogenesis have been completely or partially rendered nonfunctional, e.g., by full or partial deletion or mutagenesis. These anti-FIV vaccines may be given to susceptible hosts in the form of infectious virus or cloned DNA.

CLM What is claimed is:

1. A non-naturally occurring FIV, wherein the non-naturally occurring FIV is derived from a pathogenic FIV by specifically deleting or mutagenizing one or more of its genes or genetic elements responsible for pathogenicity, and further wherein the non-naturally occurring FIV is attenuated in pathogenicity and elicits an immune response against a pathogenic FIV in a host inoculated with the non-naturally occurring FIV.

2. The non-naturally occurring FIV of claim 1, wherein the genes or genetic element responsible for pathogenicity are selected from the group consisting of: vif, rev, OrfA/2, LTR elements, env, pol, and gag.

3. The non-naturally occurring FIV of claim 2, wherein the non-naturally occurring FIV is selected from the group consisting of: (a) a recombinant FIV with a deletion in its vif gene from about a Sau1 restriction site to about a Hind3 restriction site; (b) a recombinant FIV with about 4 to 5 nucleotides deleted from the AP-1 and/or ATF sites in the 3' and 5' LTR; (c) a recombinant FIV with a deletion in its vif gene from about a Sau1 restriction site to about a Hind3 restriction site, and with about 4 to 5 nucleotides deleted from the AP-1 and/or ATF sites in the 3' and 5' LTR; (d) a recombinant FIV with its vif gene, AP-1 and/or ATF sites in the 3' and 5' LTR deleted; and (e) a recombinant FIV with about 201 nucleotides removed from the 5' LTR and 4 or 5 nucleotides deleted from the AP-1 and/or ATF sites in the 3' LTR.

4. The non-naturally occurring FIV of claim 3, wherein the recombinant FIV is driven by an SV40pr/RU5 hybrid promoter.

5. The non-naturally occurring FIV of claim 1, wherein the FIV is selected from the group consisting of: FIV-pPPRΔAP-1, FIV-pPPRΔATF, FIV-pPPRΔAP-1/ATF, FIV pSV-pPPRΔATF, FIV pSV-pPPRΔAP-1/ATF, FIV pPPR-pSVΔvif, and FIV-pPPRΔ4.

6. A non-naturally occurring FIV vector with one or more of its genes or genetic elements responsible for pathogenicity being specifically made either absent or fully or partially non-functional, said FIV vector being attenuated in pathogenicity; and said FIV vector preventing or delaying infection of a host by, or limiting dissemination and establishment of, a pathogenic FIV in a host inoculated with the non-naturally occurring FIV.

7. The vector of claim 6, wherein said vector is selected from the group consisting of proviral DNA, genomic RNA, and cDNA.

8. The vector of claim 7, wherein the vector is a live infectious provirus DNA.

9. The vector of claim 8, wherein the genes or genetic elements responsible for pathogenicity are selected from the group consisting of: vif, rev, OrfA/2, LTR elements, env, pol and gag.

10. The vector of claim 9, wherein the vector is a proviral DNA derived from: (a) a recombinant FIV with a deletion in its vif gene from about a Sau1 restriction site to about a Hind3 restriction site; (b) a recombinant FIV with about 4 to 5 nucleotides deleted from the AP-1 and/or ATF sites in the 3' and 5' LTR; (c) a recombinant FIV with a deletion in its vif gene from about a Sau1 restriction site to about a Hind3 restriction site, and with about 4 to 5 nucleotides deleted from the AP-1 and/or ATF sites in the 3' and 5' LTR; and (d) a recombinant FIV with its vif gene, AP-1 and/or ATF sites in the 3' and 5' LTR deleted.

11. The vector of claim 7, wherein the vector is selected from the group consisting of pPPRΔvif, pPPRΔAP-1, pPPRΔATF, pPPRΔAP-1/ATF, and pPPRΔ4.

12. A vaccine composition comprising the non-naturally occurring FIV of any of claims 1-4 or 5 in a pharmaceutically acceptable carrier, wherein the non-naturally occurring FIV is live and infectious.

13. A vaccine composition comprising the non-naturally occurring vector of any of claims 6-11, in a pharmaceutically acceptable carrier, wherein the vector is live and infectious.

14. A method for immunizing or treating an animal against infection by an FIV or its related pathogen, comprising the steps of administering to such an animal an attenuated live infectious FIV of any of claims 1-4 or 5.

15. A method for immunizing or treating an animal against infection by an FIV or its related pathogen, comprising the steps of administering the live infectious vector of any of claims 6-11 to such an animal.

16. A vector derived from the non-naturally occurring FIV of claim 1.

17. The vector of claim 16, wherein the non-naturally occurring FIV is selected from the group consisting of: FIV-pPPRΔAP-1, FIV-pPPRΔATF, FIV-pPPRΔAP-1/ATF, FIV pSV-pPPRΔATF, FIV pSV-pPPRΔAP-1/ATF, FIV pPPR-pSVΔvif, and FIV-pPPRΔ4.

18. An FIV provirus construct driven by a SV40pr/RU5 promoter.

19. An FIV virus driven by an SV40pr/RU5 promoter.

20. A method for immunizing or treating a host against FIV infection, said method consisting essentially of administering a single dose of a non-naturally occurring attenuated FIV or a non-naturally occurring FIV vector, wherein protective immunity is achieved as a result of the single dose.

21. A method for treating cats infected with FIV, said method comprising administering to said cats a non-naturally occurring attenuated FIV or a non-naturally occurring FIV vector.

22. A vaccine composition comprising a self-replicating proviral DNA construct including substantially the entire genome of an animal lentivirus with at least one mutation or deletion specifically made within a region responsible for transcription, initiation, or multiplication.

23. A vaccine composition as in claim 22, wherein the DNA construct comprises a circular DNA plasmid with a prokaryotic origin of replication.

24. A vaccine as in claim 23, wherein the deletion is in the LTR.

25. A vaccine as in claim 24, wherein the deletion is in a region selected from the group consisting of: AP1, AP4, ATF, NF-κB, C/EBP, and LBP1.

26. A method for immunizing or treating a host, comprising administering a vaccine composition of any of claims 22-25 to the host.

27. The vector of claim 8, wherein the recombinant FIV is driven by an SV40pr/RU5 hybrid promoter.

28. The non-naturally occurring FIV of claim 2 wherein the non-naturally occurring FIV is selected from the group consisting of: (a) a recombinant FIV with about 100 to 600 bases deleted or modified in its vif gene; (b) a recombinant FIV with about 30 to 300 bases deleted or modified in its rev gene; (c) a recombinant FIV with about 30 to 300 bases deleted or modified in its OrfA/2 gene; (d) a recombinant FIV with up to about 20 bases deleted from its NF-κB site; (e) a recombinant FIV with up to about 20 bases deleted from its AP-1 site; (e) a recombinant FIV with up to about 20 bases deleted from its AP-4 site; and, (f) a recombinant FIV with up to about 20 bases deleted from its ATF site.

29. The non-naturally occurring FIV of claim 2 wherein the non-naturally occurring FIV is a recombinant FIV with up to about 20 bases deleted from a site selected from the following group: NF-κB, AP-1, AP-4, and ATF.

30. The non-naturally occurring FIV of claim 29 wherein the non-naturally occurring FIV is a recombinant FIV with up to about 20 bases deleted from two or more sites selected from the following group: NF-κB, AP-1, AP-4, and ATF.

31. A non-naturally occurring FIV vector with one or more of its genes or genetic elements responsible for pathogenicity being specifically made either absent or fully or partially non-functional, said FIV vector being attenuated in pathogenicity.

32. The vector of claim 31, wherein said vector is selected from the group consisting of proviral DNA, genomic RNA, and cDNA.

33. The vector of claim 32, wherein the vector is a live infectious provirus DNA.

34. The vector of claim 31, wherein the gene or genetic element responsible for pathogenicity is selected from the group consisting of: vif, rev, OrfA/2, LTR elements, env, pol, and gag.

35. The vector of claim 34, wherein the gene or genetic element being made fully or partially non-functional is selected from the group consisting of: (a) a vif gene with about 100 to 600 bases deleted or modified; (b) a rev gene with about 30 to 300 bases deleted or modified; (c) an Orf/A gene with about 30 to 300 bases deleted or modified; (d) a NF-κB site with up to about 20 bases deleted; (e) an AP-1 site with up to about 20 bases deleted; (e) an AP-4 site with up to about 20 bases deleted; and, (f) an ATF site with up to about 20 bases deleted.

36. The vector of claim 34, wherein the vector has up to about 20 bases deleted from two or more sites selected from the following group:

NF-κB, AP-1, AP-4, and ATF.

37. The vector of claim 34, wherein the vector is a DNA derived from: (a) a recombinant FIV with a deletion in its vif gene from about a Sau1 restriction site to about a Hind3 restriction site; (b) a recombinant FIV with about 4 to 5 nucleotides deleted from the AP-1 and/or ATF sites in the 3' and 5' LTR; (c) a recombinant FIV with a deletion in its vif gene from about a Sau1 restriction site to about a Hind3 restriction site, and with about 4 to 5 nucleotides deleted from the AP-1 and/or ATF sites in the 3' and 5' LTR; and (d) a recombinant FIV with its vif gene, and AP-1 and/or ATF sites in the 3' and 5' LTR deleted.

38. The vector of claim 32, wherein the vector is selected from the group consisting of pPPRΔvif, pPPRΔAP-1, pPPRΔATF, pPPRΔAP-1/ATF, and pPPRΔ4.

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=> d his

     (FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004)

     FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
                E MONTAGNIER LUC/IN
L1             99 S E3
L2             65 S L1 AND (ANTIBOD?/CLM)
L3             10 S L2 AND (P12/CLM)
L4              5 S L2 AND (P18/CLM)
L5              3 S L4 NOT L3
L6             13 S L2 AND (P25/CLM)
L7              8 S L6 NOT (L3 OR L5)
                E LUCIW PAUL/IN
L8              9 S E3-E4
L9              9 S L8 AND (ANTIBOD?)
L10             5 S L9 AND (P12)
L11             1 S L9 AND P18
L12             0 S L11 NOT L10
L13             6 S L9 AND P25
L14             1 S L13 NOT L10

=> e levy jay a/in
E1              1      LEVY JARED/IN
E2              1      LEVY JASON E/IN
E3              9 --> LEVY JAY A/IN
E4              1      LEVY JAY J/IN
E5              1      LEVY JAY S/IN
E6              3      LEVY JEAN/IN
E7              1      LEVY JEAN CLAUDE/IN
E8              1      LEVY JEAN JACQUES/IN
E9              1      LEVY JEAN MICHEL BLOCH/IN
E10             4      LEVY JEAN PAUL/IN
E11             3      LEVY JEAN PIERRE/IN
E12             4      LEVY JEFF/IN

=> s e3
L15             9 "LEVY JAY A"/IN

=> s l15 and antibod?
          97709 ANTIBOD?
L16             9 L15 AND ANTIBOD?

=> s l16 and (p12)
           5707 P12
L17             0 L16 AND (P12)

=> s l16 and p18
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          2484 P18
L18          0 L16 AND P18

=> s l16 and p25
          2295 P25
L19          0 L16 AND P25

=> d his

     (FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004)

     FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
                E MONTAGNIER LUC/IN
L1            99 S E3
L2            65 S L1 AND (ANTIBOD?/CLM)
L3            10 S L2 AND (P12/CLM)
L4             5 S L2 AND (P18/CLM)
L5             3 S L4 NOT L3
L6            13 S L2 AND (P25/CLM)
L7             8 S L6 NOT (L3 OR L5)
                E LUCIW PAUL/IN
L8             9 S E3-E4
L9             9 S L8 AND (ANTIBOD?)
L10            5 S L9 AND (P12)
L11            1 S L9 AND P18
L12            0 S L11 NOT L10
L13            6 S L9 AND P25
L14            1 S L13 NOT L10
                E LEVY JAY A/IN
L15            9 S E3
L16            9 S L15 AND ANTIBOD?
L17            0 S L16 AND (P12)
L18            0 S L16 AND P18
L19            0 S L16 AND P25

=> e gallo robert c/in
E1             2     GALLO RICHARD L/IN
E2             4     GALLO ROBERT/IN
E3            45 --> GALLO ROBERT C/IN
E4             3     GALLO ROBERTO A/IN
E5             2     GALLO RODRIGUEZ CAROLA/IN
E6             4     GALLO ROGER/IN
E7             2     GALLO ROGER J/IN
E8             1     GALLO SABINO/IN
E9             1     GALLO SAM/IN
E10            1     GALLO SECONDO/IN
E11            7     GALLO SERGIO/IN
E12            2     GALLO SIDNEI DAL/IN

=> s e2 or e3
               4 "GALLO ROBERT"/IN
              45 "GALLO ROBERT C"/IN
L20           49 "GALLO ROBERT"/IN OR "GALLO ROBERT C"/IN

=> s l20 and antibod?
         97709 ANTIBOD?
L21          43 L20 AND ANTIBOD?

=> s l21 and p12
          5707 P12
L22          0 L21 AND P12

=> s l21 and p18
          2484 P18
L23          2 L21 AND P18
```

=> d l23,cbib,ab,clm,1-2

L23 ANSWER 1 OF 2 USPATFULL on STN
2001:105062 Chemokine inhibition of immunodeficiency virus.
Vico, Anthony De, Alexandria, VA, United States
Garzino-Demo, Alfredo, Baltimore, MD, United States
Gallo, Robert C., Bethesda, MD, United States
US 2001006681 A1 20010705
APPLICATION: US 2000-747142 A1 20001222 (9)
DOCUMENT TYPE: Utility; APPLICATION.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to therapeutic compositions and methods for treating and preventing infection by an immunodeficiency virus, particularly HIV infection, using chemokine proteins, nucleic acids and/or derivatives or analogs thereof.

CLM What is claimed is:

1. A method of formulating a composition comprising one or more chemokines for use in a pharmaceutical composition having anti-HIV activity against one or more HIV-1 isolates present in an individual at a given time, the method comprising: (a) contacting a first aliquot of HIV+ cells obtained from said individual with a chemokine, chemokine derivative and/or chemokine analog; and (b) comparing the ability to isolate HIV from said cells with the ability to isolate HIV from a second aliquot of HIV+ cells obtained from said individual that are not contacted with said chemokines, chemokine derivatives and/or chemokine analogs; (c) formulating the composition to comprise one or more chemokines, chemokine derivatives and/or chemokine analogs, which produce a decrease in the ability to isolate virus in the presence of said chemokines, chemokine derivatives and/or chemokine analogs.

2. The method of claim 1, further comprising the step of combining in the composition two or more of said chemokines, chemokine derivatives and/or chemokine analogs demonstrating anti-viral activity against said HIV-1 isolates.

3. The method of claim 2 wherein at least 3 of said chemokines, chemokine derivatives and/or chemokine analogs are combined.

4. The method of claim 1 further comprising repeating said contacting and comparing steps for at least 2 individual chemokines, chemokine derivatives and/or chemokine analogs.

5. The method of claim 1 further comprising repeating said contacting and comparing steps for at least 3 individual chemokines, chemokine derivatives and/or chemokine analogs.

6. The method of claim 4 or 5 wherein the chemokines, derivatives, or analogs are selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin.

7. The method of claim 1 wherein the HIV+ cells are co-cultured with uninfected CD4+ peripheral blood mononuclear cells prior to said contacting with the chemokines, chemokine derivatives and/or chemokine analogs.

8. A method of formulating a pharmaceutical composition for a particular human subject infected with HIV, the method comprising: (a) assaying a chemokine, chemokine derivative and/or chemokine analog for the ability to inhibit: (i) HIV infection; (ii) HIV replication; or (iii) expression of an RNA or protein of HIV; wherein said HIV is a primary isolate recovered from said subject; and (b) combining an amount effective for therapy of a disease or disorder associated with HIV infection of one or more of said chemokines, chemokine derivatives and/or chemokine analogs demonstrating said ability with a

pharmaceutically acceptable carrier suitable for use in vivo in humans.

9. The method of claim 9 wherein said assaying of the chemokine, derivative, or analog is by a method comprising: (a) measuring HIV-1 levels in primary macrophage cells or primary CD4+ peripheral blood mononuclear cells incubated with the primary isolate, which cells have been contacted with the chemokines, chemokine derivatives and/or chemokine analogs; and (b) comparing the measured HIV-1 levels in the cells which have been contacted with the chemokines, chemokine derivatives and/or chemokine analogs with said levels in cells not so contacted with the chemokines, chemokine derivatives and/or chemokine analogs, wherein a lower level in said contacted cells indicates that the chemokines, chemokine derivatives and/or chemokine analogs have anti-HIV activity.

10. The method of claim 9 wherein primary CD4+ peripheral blood mononuclear cells are incubated with the primary isolate.

11. The method of claim 9 wherein the primary isolate has been propagated and maintained only in macrophages.

12. The method of claim 9 wherein the primary isolate is syncytia inducing.

13. The method of claim 9 wherein the primary isolate is non-syncytia inducing.

14. The method of claim 8 wherein said assaying of the chemokines, chemokine derivatives and/or chemokine analogs is by a method comprising: (a) measuring HIV-1 levels in cultures of HIV+ cells obtained from the patient which have been contacted with the chemokines, chemokine derivatives and/or chemokine analogs; and (b) comparing said measured HIV-1 levels with said levels in said cells not so contacted with the chemokines, chemokine derivatives and/or chemokine analogs, wherein a lower HIV-1 level in cultures of said contacted cells indicates that the chemokines, chemokine derivatives and/or chemokine analogs has anti-HIV activity.

15. The method of claim 14 further comprising repeating steps (a) and (b) for at least 2 individual chemokines, or derivatives or analogs.

16. The method of claim 14 further comprising repeating steps (a) and (b) for at least 3 individual chemokines, or derivatives or analogs.

17. The method of claim 15 or 16 wherein the chemokines, derivatives, or analogs are selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin.

18. A method of treating or preventing HIV infection or replication in a human subject in need of such treatment, the method comprising administering to the subject a pharmaceutical composition comprising: (a) a chemokine selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin in an amount effective to inhibit HIV infection or replication; and (b) a pharmaceutically acceptable carrier.

19. The method of claim 18 wherein the only chemokines in said composition are those demonstrated to have activity against a primary HIV isolate from said subject.

20. The method of claim 18 wherein said pharmaceutical composition comprises at least 2 of said chemokines.

21. The method of claim 20 wherein the chemokines are selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin.

22. A method of treating or preventing HIV infection or replication in a human subject in need of such treatment, the method comprising administering to the subject a pharmaceutical composition comprising: (a) a nucleic acid encoding a chemokine selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin, in an amount effective to inhibit HIV infection or replication; and (b) a pharmaceutically acceptable carrier.

23. The method of claim 22 wherein said composition comprises nucleic acids encoding at least 2 of said chemokines.

24. The method of claim 23 wherein the nucleic acids encode chemokines selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin.

25. A method of treating or preventing HIV infection or replication in a human subject in need of such treatment, the method comprising administering to the subject an amount of a purified protein effective to treat or prevent HIV infection, wherein the protein comprises a fragment or derivative of a chemokine selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3γ, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin.

26. The method of claim 25 wherein the only chemokine fragments or derivatives in said composition are those demonstrated to have activity against a primary HIV isolate from said subject.

27. The method of claim 25 wherein fragments or derivatives of at least 2 different chemokines are administered to the subject.

28. The method of claim 25 further comprising administering to the subject an anti-viral drug other than a chemokine, in an amount effective to inhibit HIV infection or replication.

29. The method of claim 28 wherein the other anti-viral drug is selected from one or more of the group consisting of AZT, ddI, ddC, 3TC, and sequinavir.

30. The method of claim 28 wherein the protein is administered intramuscularly.

31. A method of treating or preventing HIV infection or replication in a human subject, the method comprising administering to the subject wherein such treatment or prevention is desired an amount of a nucleic acid effective to treat or prevent HIV infection, wherein the nucleic acid encodes a fragment or derivative of a chemokine selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin.

32. A method of treating or preventing HIV infection or replication in a

human subjec, the method comprising administering to the subject wherein such treatment or prevention is desired a composition comprising: (a) a first chemokine selected from the group consisting of RANTES, MIP-1α, MIP-1β, or IL-8; (b) a second chemokine selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, lymphotactin, and SDF-1; together in an amount effective to inhibit HIV infection or replication.

33. The method of claim 32 wherein the total of the chemokines selected from (a) and (b) is at least 3.

34. The method of claim 32 further comprising administering to the subject an anti-viral drug other than a chemokine, in an amount effective to inhibit HIV infection or replication.

35. The method of claim 34 wherein the anti-viral drug is selected from one or more of the group consisting of AZT, ddI, ddC, 3TC, and sequinavir.

36. The method of claim 32 wherein the composition is administered intramuscularly.

37. A method of treating or preventing HIV infection or replication in a human subject in need of such treatment, the method comprising administering to the subject a composition comprising: (a) a first nucleic acid encoding RANTES, MIP-1α, MIP-1β, or IL-8, and (b) a second nucleic acid encoding a chemokine selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, lymphotactin and SDF-1; together in an amount effective to inhibit HIV infection or replication.

38. A pharmaceutical composition comprising: (a) a chemokine selected from the group consisting of MCP-2, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin, in an amount effective to inhibit HIV infection or replication; and (b) a pharmaceutically acceptable carrier.

39. The pharmaceutical composition of claim 38 wherein the chemokine is purified.

40. The pharmaceutical composition of claim 38 further comprising at least 1, 2, 3, 4, 5, 6, 8, or 9 chemokines in an amount effective to inhibit HIV infection or replication.

41. The pharmaceutical composition of claim 38 further comprising RANTES, MIP-1α, MIP-1β, MCP-1, MCP-3, IL-8 or SDF-1 together in an amount effective to inhibit HIV infection or replication.

42. The pharmaceutical composition of claim 41 wherein the chemokines are purified.

43. A pharmaceutical composition comprising: (a) a derivative or analog of a chemokine selected from the group consisting of MCP-2, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin, in an amount effective to inhibit HIV infection or replication; and (b) a pharmaceutically acceptable carrier.

44. The pharmaceutical composition of claim 43 wherein the chemokine

derivative or analog is purified.

45. The pharmaceutical composition of claim 43 further comprising derivatives or analogs of at least 3 of said chemokines, in an amount effective to inhibit HIV infection or replication.

46. The pharmaceutical composition of claim 43 further comprising RANTES, MIP-1α, MIP-1β, MCP-1, MCP-3 or IL-8 in an amount effective to inhibit HIV infection or replication.

47. The pharmaceutical composition of claim 43 further comprising a derivative of RANTES, MIP-1α, MIP-1β, MCP-1, MCP-3 and IL-8 in an amount effective to inhibit HIV infection or replication.

48. A pharmaceutical composition comprising: (a) one or more pharmaceutically active components selected from the group consisting of: (i) a nucleic acid encoding a chemokine selected from the group consisting of MCP-2, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, lymphotactin and SDF-1, in an amount effective to inhibit HIV infection or replication; and (ii) an analog of a chemokine of (i); (iii) a fragment of a chemokine of (i); (iv) a derivative of a chemokine, analog or fragment of (i), (ii), or (iii); and (v) a nucleic acid encoding a chemokine chemokine, analog or fragment of (i), (ii), or (iii); and (b) a pharmaceutically acceptable carrier.

49. A pharmaceutical composition comprising: (a) two or more chemokines, each of which binds to at least one chemokine receptor selected from the group consisting of CC CKR-1, CC CKR-2A, CC CKR-2B, CC CKR-3, CC CKR-4, CC CKR-5, CxC CKR4, IL-8RA, IL-8RB, Mig receptor, γIP-10 receptor and Duffy antigen, in an amount effective to inhibit HIV infection or replication; and (b) a pharmaceutically acceptable carrier.

50. A method of formulating a pharmaceutical composition having anti-HIV activity against one or more HIV-1 isolates present in an individual at a given time, the method comprising: (a) contacting a first aliquot of CD4+ cells, one or more virus isolates obtained from said individual, and a chemokine, chemokine derivative and/or chemokine analog; and (b) comparing the ability to isolate HIV from said cells with the ability to isolate HIV from a second aliquot of CD4+ cells contacted with said virus isolates that are not contacted with said chemokines, chemokine derivatives and/or chemokine analogs, wherein a decrease in the ability to isolate virus in the presence of said chemokines, chemokine derivatives and/or chemokine analogs is indicative that the chemokines, chemokine derivatives and/or chemokine analogs has anti-viral activity against said HIV-1 isolates.

51. A pharmaceutical composition comprising MDC and I-309.

52. A method for treating HIV infection, the method comprising administering to a subject in need of such treatment a therapeutically effective amount of MDC and I-309.

53. The method of claim 52 wherein the MDC and I-309 are administered together as components of a pharmaceutical composition, along with a pharmaceutically acceptable carrier.

54. The method of claim 52 wherein the MDC and I-309 are administered in a synergistically effective and therapeutically effective amount.

L23 ANSWER 2 OF 2 USPATFULL on STN
2001:51764 Chemokines that inhibit immunodeficiency virus infection and methods

based thereon.
DeVico, Anthony L., Alexandria, VA, United States
Gallo, Robert C., Bethesda, MD, United States
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University of Maryland Biotechnology Institute, Baltimore, MD, United States (U.S. corporation)
US 6214540 B1 20010410
APPLICATION: US 1997-826133 19970326 (8)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to therapeutic compositions and methods for treating and preventing infection by an immunodeficiency virus, particularly HIV infection, using chemokine proteins, nucleic acids and/or derivatives or analogues thereof.

CLM What is claimed is:

1. A method of identifying one or more chemokine compounds for use in a pharmaceutical composition having anti-HIV activity against one or more HIV-1 isolates present in an individual at a given time, wherein: (a) the chemokine compounds are selected from the group consisting of: (i) chemokines; and (ii) chemokines comprising one or more conservative substitutions, terminal additions and/or terminal deletions; (b) the method comprises: (i) contacting a first aliquot of HIV+ cells obtained from said individual with one or more of the chemokine compounds; and (ii) comparing the ability to isolate HIV from said cells with the ability to isolate HIV from a second aliquot of HIV cells obtained from said individual that are not contacted with said chemokine compound(s); and (c) a decrease in the ability to isolate virus in the presence of said chemokine compound(s) is indicative that the chemokine compound(s) have anti-viral activity against said HIV-1 isolate(s).

2. The method of claim 1, further comprising the step of combining in a composition more than one of the chemokine compound(s) demonstrating anti-viral activity against said HIV-1 isolates.

3. The method of claim 2 in which at least 3 of the chemokine compound(s) are combined.

4. The method of claim 1 further comprising repeating said contacting and comparing steps for at least 3 of the chemokine compound(s).

5. The method of claim 1 further comprising repeating said contacting and comparing steps for at least 5 of the chemokine compound(s).

6. The method of claim 4 or 5 in which the chemokine compound(s) are selected from the group consisting of: (a) MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin; and (b) chemokines of (a) comprising one or more conservative substitutions, terminal additions and/or terminal deletions.

7. The method of claim 1 in which the HIV cells are co-cultured with uninfected CD4+ peripheral blood mononuclear cells prior to said contacting with the chemokine compound(s).

8. A purified fragment of a RANTES protein comprising an amino acid sequence consisting of Lys-Asn-Arg-Gln-Val (SEQ ID NO:3), with the proviso that the fragment is less than 55 amino acids in length, and wherein the fragment optionally comprises conservative substitutions in sequence relative to the fragment.

9. The purified fragment of claim 8 comprising said conservative substitutions.

10. A purified fragment of a RANTES protein comprising an amino acid sequence consisting of Cys-Ser-Asn-Pro-Ala-Val-Val-Phe-Val-Thr-Arg-Lys-

Asn-Arg-Gln-Val-Cys (SEQ ID NO:4), with the proviso that the fragment is less than 55 amino acids in length, and wherein the fragment optionally comprises conservative substitutions in sequence relative to the fragment.

11. The purified fragment of claim 10 comprising said conservative substitutions.

12. A purified fragment of a SDF-1 protein comprising an amino acid sequence consisting of Lys-Asn-Asn-Asn-Arg-Gln-Val (SEQ ID NO: 1), with the proviso that the fragment is less than 60 amino acids in length, and wherein the fragment optionally comprises conservative substitutions in sequence relative to the fragment.

13. The purified fragment of claim 12 comprising said conservative substitutions.

14. A purified fragment of a SDF-1 protein comprising an amino acid sequence consisting of Cys-Ala-Leu-Gln-Ile-Val-Ala-Arg-Leu-Lys-Asn-Asn-Asn-Arg-Gln-Val-Cys (SEQ ID NO:2), with the proviso that the fragment is less than 60 amino acids in length, and wherein the fragment optionally comprises conservative substitutions in sequence relative to the fragment.

15. The purified fragment of claim 14 comprising said conservative substitutions.

16. A chimeric protein comprising a fragment of RANTES comprising the amino acid sequence Lys-Asn-Arg-Gln-Val (SEQ ID NO:3), wherein said fragment is less than 55 amino acids in length and is capable of binding a chemokine receptor, and wherein said fragment is fused via a covalent bond to an amino acid sequence of a molecule other than RANTES.

17. A chimeric protein comprising a fragment of RANTES comprising the amino acid sequence Cys-Ser-Asn-Pro-Ala-Val-Val-Phe-Val-Thr-Arg-Lys-Asn-Arg-Gln-Val-Cys (SEQ ID No:4) wherein said fragment is less than 55 amino acids in length and is capable of binding a chemokine receptor, and wherein said fragment is fused via a covalent bond to an amino acid sequence of a molecule other than RANTES.

18. A chimeric protein comprising a fragment of SDF-1 comprising the amino acid sequence Lys-Asn-Asn-Asn-Arg-Gln-Val (SEQ ID NO:1), wherein said fragment is less than 60 amino acids in length and is capable of binding a chemokine receptor, and wherein said fragment is fused via a covalent bond to an amino acid sequence of a molecule other than SDF-1.

19. A chimeric protein comprising a fragment of SDF-1 comprising the amino acid sequence Cys-Ala-Leu-Gln-Ile-Val-Ala-Arg-Leu-Lys-Asn-Asn-Asn-Arg-Gln-Val-Cys (SEQ ID NO:2) wherein said fragment is less than 60 amino acids in length and is capable of binding a chemokine receptor, and wherein said fragment is fused via a covalent bond to an amino acid sequence of a molecule other than SDF-1.

20. The chimeric protein of claim 16, 17, 18 or 19 in which the molecule is a chemokine.

21. A chimeric protein comprising a first amino acid sequence comprising Lys-Asn-Asn-Asn-Arg-Gln-Val (SEQ ID NO:1) of SDF-1 fused via a covalent bond to a second amino acid sequence comprising the amino acid sequence Lys-Asn-Arg-Gln-Val (SEQ ID NO:3) of RANTES.

22. A chimeric protein comprising a RANTES derivative wherein the amino acid sequence Lys-Asn-Asn-Asn-Arg-Gln-Val (SEQ ID NO:1) or Lys-Asn-X-Arg-Gln-Val (SEQ ID NO:5) is substituted for the sequence Lys-Asn-Arg-Gln-Val (SEQ ID NO:3), in RANTES.

23. A chimeric protein comprising a RANTES derivative wherein the amino acid sequence Cys-Ala-Leu-Gln-Ile-Val-Ala-Arg-Leu-Lys-Asn-Asn-Asn-Arg-Gln-Val-Cys (SEQ ID NO:2) is substituted for the sequence Cys-Ser-Asn-Pro-Ala-Val-Val-Phe-Val-Thr-Arg-Lys-Asn-Arg-Gln-Val-Cys (SEQ ID NO:4) in RANTES.

24. A chimeric protein comprising a SDF-1 derivative wherein the amino acid sequence Lys-Asn-Arg-Gln-Val (SEQ ID NO:3) or Lys-Asn-X-Arg-Gln-Val (SEQ ID NO:5) is substituted for the sequence Lys-Asn-Asn-Asn-Arg-Gln-Val (SEQ ID NO:1) in SDF-1.

25. A chimeric protein comprising a SDF-1 derivative wherein the amino acid sequence Cys-Ser-Asn-Pro-Ala-Val-Val-Phe-Val-Thr-Arg-Lys-Asn-Gln-Val-Cys (SEQ ID NO: 4) is substituted for the sequence Cys-Ala-Leu-Gln-Ile-Val-Ala-Arg-Leu-Lys-Asn-Asn-Asn-Arg-Gln-Val-Cys (SEQ ID NO: 2) in SDF-1.

26. A purified protein fragment comprising an amino acid sequence consisting of Lys-Asn-X-Arg-Gln-Val (SEQ ID NO:5), and wherein the fragment optionally comprises conservative substitutions in sequence relative to the fragment.

27. The purified fragment of claim 26 comprising said conservative substitutions.

28. The derivative or analogue of claim 22 that has only conservative substitutions in sequence relative to the chemokine.

29. The fragment of claim 8 in which said fragment is less than 15 amino acids in length.

30. The fragment of claim 12 in which said fragment is less than 15 amino acids in length.

31. A chimeric protein comprising a first amino acid sequence comprising Cys-Ala-Leu-Gln-Ile-Val-Ala-Arg-Leu-Lys-Asn-Asn-Asn-Arg-Gln-Val-Cys (SEQ ID NO:2) of SDF-1 fused via a covalent bond to a second amino acid sequence comprising Cys-Ser-Asn-Pro-Ala-Val-Val-Phe-Val-Thr-Arg-Lys-Asn-Arg-Gln-Val-Cys (SEQ ID NO:4) of RANTES.

32. A purified derivative of RANTES wherein the only non-conservative substitutions relative to RANTES are the substitution of leucine and isoleucine in place of the tyrosine residues at amino acid numbers 27 and 29, respectively.

33. A pharmaceutical composition comprising the derivative of claim 32 and a pharmaceutically acceptable carrier.

34. A purified derivative of SDF-1 wherein the only non-conservative substitutions relative to SDF-1 are the substitution of tyrosine in place of the leucine and isoleucine residues at amino acid numbers 28 and 30, respectively.

35. A pharmaceutical composition comprising the derivative of claim 34 and a pharmaceutically acceptable carrier.

36. A chimeric protein comprising a fragment of SDF-1 comprising the amino acid sequence Lys-Asn-Asn-Asn-Arg-Gln-Val (SEQ ID NO:1), wherein said SDF-1 fragment is less than 60 amino acids in length, wherein the fragment of SDF-1 is fused via a covalent bond to an amino acid sequence comprising a fragment of RANTES comprising the amino acid sequence Lys-Asn-Arg-Gln-Val (SEQ ID NO:3), wherein said RANTES fragment is less than 55 amino acids in length.

37. A chimeric protein comprising a fragment of SDF-1 comprising the amino acid sequence Cys-Ala-Leu-Gln-Ile-Val-Ala-Arg-leu-Lys-Asn-Asn-Asn-

Arg-Gln-Val-Cys (SEQ ID NO:2), wherein said SDF-1 fragment is less than 60 amino acids in length; fused via a covalent bond to an amino acid sequence comprising a fragment of RANTES comprising the amino acid sequence Cys-Ser-Asn-Pro-Ala-Val-Val-Phe-Val-Thr-Arg-Lys-Asn-Arg-Gln-Val-Cys (SEQ ID NO:4), wherein said RANTES fragment is less than 55 amino acids in length.

38. A method of formulating a multiple-chemokine pharmaceutical composition having anti-HIV activity against one or more HIV-1 isolates present in an individual at a given time comprising: (a) contacting a first aliquot of HIV-cells obtained from said individual with one or more chemokines selected from the group consisting of MCP-1, MCP-2, MCP-3, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodus, I-309, γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and lymphotactin; and (b) comparing the ability to isolate HIV present in said cells with the ability to isolate HIV present in a second aliquot of HIV cells obtained from said individual that are not contacted with said one or more chemokines; wherein a decrease in the ability to isolate HIV in the presence of said chemokine is indicative that the chemokine has anti-viral activity against said HIV-1 isolates.

39. A method of formulating a multiple-chemokine pharmaceutical composition, the method comprising: (a) selecting two or more chemokines from two or more subfamilies of chemokines, said subfamilies selected group consisting of α chemokines, β chemokines and γ chemokines or analogues or derivatives thereof; (b) assaying said chemokines for the ability to inhibit a primary HIV isolate recovered from a subject; and (c) combining an amount of the two or more chemokines into a pharmacuetical composition.

40. The method of claim 39 wherein the chemokines of the a subfamily are selected from the group consisting of: γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and SDF-1, and γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and SDF-1, having one or more conservative substitutions or terminal additions and/or deletions.

41. The method of claim 39 wherein the chemokines of the β subfamily are selected from the group consisting of: MCP-2, MCP4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodous, and I-309, and MCP-2, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodous, and I-309 having one or more conservative substitutions or terminal additions and/or deletions.

42. The method of claim 39 wherein the chemokines of the β subfamily are selected from the group consisting of: RANTES, MIP-1α and MIP-1β, and RANTES, MIP-1α and MIP-1β, having one or more conservative substitutions or terminal additions and/or deletions.

43. The method of claim 39 wherein the chemokine of the γ subfamily is lymphotactin and lymyhotactin having one or more conservative substitutions or terminal additions and/or deletions.

44. The method of claim 39 wherein the chemokines of the α subfamily are selected from the group consisting of: γIP-10, PF4, NAP-2, GRO-α, GRO-β, GRO-γ, ENA-78, GCP-2, and SDF-1.

45. The method of claim 39 wherein the chemokines of the β subfamily are selected from the group consisting of: MCP-2, MCP-4, MIP-1γ, MIP-3α, MIP-3β, eotaxin, Exodous, and I-309.

46. The method of claim 39 wherein the chemokines of the β subfamily are selected from the group consisting of: RANTES, MIP-1α and MIP-1β.

47. The method of claim 39 wherein the chemokine of the γ subfamily is lymphotactin.

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     (FILE 'HOME' ENTERED AT 21:33:56 ON 01 MAR 2004)

     FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004
                E MONTAGNIER LUC/IN
L1             99 S E3
L2             65 S L1 AND (ANTIBOD?/CLM)
L3             10 S L2 AND (P12/CLM)
L4              5 S L2 AND (P18/CLM)
L5              3 S L4 NOT L3
L6             13 S L2 AND (P25/CLM)
L7              8 S L6 NOT (L3 OR L5)
                E LUCIW PAUL/IN
L8              9 S E3-E4
L9              9 S L8 AND (ANTIBOD?)
L10             5 S L9 AND (P12)
L11             1 S L9 AND P18
L12             0 S L11 NOT L10
L13             6 S L9 AND P25
L14             1 S L13 NOT L10
                E LEVY JAY A/IN
L15             9 S E3
L16             9 S L15 AND ANTIBOD?
L17             0 S L16 AND (P12)
L18             0 S L16 AND P18
L19             0 S L16 AND P25
                E GALLO ROBERT C/IN
L20            49 S E2 OR E3
L21            43 S L20 AND ANTIBOD?
L22             0 S L21 AND P12
L23             2 S L21 AND P18

=> s l21 and p25
          2295 P25
L24          8 L21 AND P25

=> s l24 not l23
L25          8 L24 NOT L23

=> d l25,cbib,ab,clm,1-8

L25  ANSWER 1 OF 8  USPATFULL on STN
2003:318245 Immunodeficiency recombinant poxvirus.
    Paoletti, Enzo, Delmar, NY, UNITED STATES
    Tartaglia, James, Schenectady, NY, UNITED STATES
    Cox, William I., East Breenbush, NY, UNITED STATES
    Gallo, Robert, Baltimore, MD, UNITED STATES
    Franchini, Genoveffa, Washington, DC, UNITED STATES
    US 2003223987 A1 20031204
    APPLICATION: US 2003-441788  A1  20030520 (10)
    DOCUMENT TYPE: Utility; APPLICATION.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      Attenuated recombinant viruses containing DNA encoding an
        immunodeficiency virus and/or CTL antigen, as well as methods and
        compositions employing the viruses, expression products therefrom, and
        antibodies generated from the viruses or expression products, are
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disclosed and claimed. The recombinant viruses can be NYVAC or ALVAC recombinant viruses. The DNA can code for at least one of: HIV1gag(+pro)(IIIB), gp120(MN)(+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, ELDKWA or LDKW epitopes, preferably HIV1gag(+pro)(IIIB), gp120(MN) (+transmembrane), two (2) nef(BRU)CTL and three (3) pol(IIIB)CTL epitopes; or two ELDKWA in gp120 V3 or another region or in gp160. The two (2) nef(BRU)CTL and three (3) pol(IIIB)CTL epitopes are preferably CTL1, CTL2, pol1, pol2 and pol3. The recombinant viruses and gene products therefrom and **antibodies** generated by the viruses and gene products have several preventive, therapeutic and diagnostic uses. DNA from the recombinant viruses are useful as probes or, for generating PCR primers or for immunization. Also disclosed and claimed are HIV immunogens and modified gp160 and gp120.

CLM What is claimed is:

1. A modified recombinant virus, said modified recombinant virus having virus-encoded genetic functions inactivated therein so that the virus has attenuated virulence, yet retained efficacy; said virus further comprising exogenous DNA in a nonessential region of the virus genome, said exogenous DNA encoding at least one immunodeficiency virus epitope.

2. The virus of claim 1 wherein said virus is a poxvirus.

3. The virus of claim 2 wherein the poxvirus is a vaccinia virus.

4. The virus of claim 3 wherein the genetic functions are inactivated by deleting at least one open reading frame.

5. The virus of claim 4 wherein the deleted genetic functions include a C7L-K1L open reading frame, or, a host range region.

6. The virus of claim 5 wherein at least one additional open reading frame is deleted; and, the additional open reading frame is selected from the group consisting of: J2R, B13R+B14R, A26L, A56R, and I4L.

7. The virus of claim 5 wherein at least one additional open reading frame is deleted; and, the additional open reading frame is selected from the group consisting of: a thymidine kinase gene, a hemorrhagic region, an A type inclusion body region, a hemagglutinin gene, and a large subunit, ribonucleotide reductase.

8. The virus of claim 6 wherein J2R, B13R+B14R, A26L, A56R, C7L-K1L and I4L are deleted from the virus.

9. The virus of claim 7 wherein a thymidine kinase gene, a hemorrhagic region, an A type inclusion body region, a hemagglutinin gene, a host range region, and a large subunit, ribonucleotide reductase are deleted from the virus.

10. The virus of claim 8 which is a NYVAC recombinant virus.

11. The virus of claim 9 which is a NYVAC recombinant virus.

12. The virus of claim 11 wherein the exogenous DNA codes for at least one of: HIV1gag(+pro)(IIIB), gp120(MN)(+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, and ELDKWA or LDKW epitopes.

13. The virus of claim 12 wherein the exogenous DNA codes for HIV1gag (+pro)(IIIB), gp120(MN)(+transmembrane), two nef(BRU)CTL and three pol(IIIB)CTL epitopes; or, two ELDKWA epitopes.

14. The virus of claim 13 wherein the two nef(BRU)CTL and three pol(IIIB)CTL epitopes are: CTL1, CTL2, pol1, pol2 and pol3.

15. The virus of claim 12 wherein the ELDKWA or LDKW epitopes are expressed as part of a region of gp120 or a region of gp160.

16. The virus of claim 15 wherein the ELDKWA or LDKWA epitopes are expressed as part of gp120 V3.

17. A modified recombinant avipox virus which is modified so that it has attenuated virulence in a host; and, which contains exogenous DNA in a nonessential region of the virus genome, said exogenous DNA encoding at least one immunodeficiency virus epitope.

18. The virus of claim 17 wherein said virus is a canarypox virus.

19. The virus of claim 18 wherein the canarypox virus is a Rentschler vaccine strain which was attenuated through more than 200 serial passages on chick embryo fibroblasts, a master seed therefrom was subjected to four successive plaque purifications under agar, from which a plaque clone was amplified through five additional passages.

20. The virus of claim 18 which is an ALVAC recombinant virus.

21. The virus of claim 18 wherein the exogenous DNA codes for at least one of: HIV1gag(+pro)(IIIB), gp120(MN)(+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, and ELDKWA or LDKW epitopes.

22. The virus of claim 18 wherein the exogenous DNA codes for at least one of: HIV1gag(+pro)(IIIB), gp120(MN)(+transmembrane), two nef(BRU)CTL and three pol(IIIB)CTL epitopes; or two ELKDWA epitopes.

23. The virus of claim 21 wherein the ELDKWA or LDKWA epitopes are expressed as part of a region of gp120 or a region of gp160.

24. The virus of claim 23 wherein the ELDKWA or LDKWA epitopes are expressed as part of gp120 V3.

25. The virus of claim 22 wherein the two nef(BRU)CTL and three pol(IIIB)CTL epitopes are: CTL1, CTL2, pol1, pol2 and pol3.

26. The virus of claim 21 which is vCP205 (ALVAC-MN120TMG), vCP264 (ALVAC-MN120TMGN), vCP300 (ALVAC-MN120TMGNP), or vCP1307.

27. vP1313 or vP1319.

28. A method for treating a patient in need of immunological treatment or of inducing an immunological response in an individual comprising administering to said patient or individual a composition comprising a virus as claimed in any one of claims 1, 12, 14, 21, 26 or 27 in admixture with a suitable carrier.

28. A composition for inducing an immunological response comprising a virus as claimed in any one of claims 1, 12, 14, 21, 26 or 27 in admixture with a suitable carrier.

29. A method for expressing a gene product in a cell cultured in vitro comprising introducing into the cell a virus as claimed in any one of claims 1, 12, 14, 21, 26 or 27.

29. An immunodeficiency virus antigen prepared from in vitro expression of a virus as claimed in any one of claims 1, 12, 14, 19, 22 or 23.

30. An **antibody** elicited by in vivo expression of an antigen from a virus as claimed in any one of claims 1, 12, 14, 19, 22 or 23 or, by administration of an immunodeficiency virus associated antigen from in vitro expression of the virus.

31. An HIV immunogen selected from the group consisting of: HIV1gag(+pro)(IIIB), gp120(MN)(+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, and ELDKWA or LDKW epitopes.

32. The HIV immunogen of claim 31 wherein the ELDKWA or LDKWA is part of a region of gp120 or a region of gp160.

33. The HIV immunogen of claim 32 wherein the ELDKWA or LDKWA is part of gp120 V3.

34. A gp120 or gp160 modified so as to contain an epitope not naturally occurring in gp120 or gp160.

35. The gp120 or gp160 of claim 34 modified so as to contain a B-cell epitope not naturally occurring in gp120 or gp160.

36. The gp120 or gp160 or claim 34 which is a gp120 modified in the V3 loop so as to contain an epitope not naturally occurring on the gp120 V3 loop.

37. The gp160 or gp120 of claim 36 wherein teh epitope is a B-cell epitope.

38. The gp160 or gp120 or claim 36 wherein the eiptope is ELDKWA or LDKWA.

39. The gp160 or gp120 of claim 34 which is a gp120 modified to contain at least one of HIV1gag(+pro)(IIIB), gp120(MN) (+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, and ELDKWA or LDKW epitopes.

40. The gp160 of gp120 of claim 39 wherein the gp120 is modified in the V3 loop to contain the epitope.

L25 ANSWER 2 OF 8 USPATFULL on STN
2003:260649 Methods for the propagation, isolation, identification, and preparation of human immunodeficiency virus type 1 (HIV-1).
Montagnier, Luc, Le Plessis Robinson, FRANCE
Chermann, Jean-Claude, Elancourt, FRANCE
Barre-Sinoussi, Francoise, Issy les Moulineaux, FRANCE
Brun-Vezinet, Francoise, Paris, FRANCE
Rouzioux, Christine, Paris, FRANCE
Rozenbaum, Willy, Paris, FRANCE
Dauguet, Charles, Paris, FRANCE
Gruest, Jacqueline, L'Hay les Roses, FRANCE
Nugeyre, Marie-Therese, Paris, FRANCE
Rey, Francoise, Paris, FRANCE
Axler-Blin, Claudine, Paris, FRANCE
Chamaret, Solange, Paris, FRANCE
Gallo, Robert C., Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadharan, Mangalasseril G., Vienna, VA, United States
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)The United States of America as represented by the Secretary of the Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 6627395 B1 20030930
APPLICATION: US 1995-466256 19950606 (8)
PRIORITY: GB 1983-24800 19830915
GB 1983-8424800 19830915
DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The identification, separation, purification, and propagation of the HIV-1 virus is provided. Moreover, the preparation of antigens from HIV-1 is further provided. The identification of HIV-1 involves the purification of a virus sample from lymphocytes and contacting the sample with **antibodies**, which bind to HIV-1 viruses, is provided. The propagation of HIV-1 virus involves infecting uninfected T lymphocytes with the virus. Moreover, the preparation of antigens from HIV-1 involves the separation of protein components of a purified HIV-1 virus under denaturing conditions.

CLM What is claimed is:

1. A method for preparing and detecting HIV-1 RNA from a lysate of an HIV-1 virus, said method comprising: (a) providing a biological sample that comprises human CD4+ lymphocytes infected with HIV-1 virus; (b) separating said virus from said human CD4+ lymphocytes; (c) centrifuging said separated virus to form a fraction comprising concentrated virus; (d) isolating said fraction comprising concentrated virus; (e) lysing said virus; (f) precipitating the RNA of said virus; and (g) detecting said viral RNA.

2. The method of claim 1, wherein said method comprises banding said virus on a sucrose gradient or a metrizamide gradient.

3. The method of claim 1, wherein said method comprises pelleting said virus.

4. The method of claim 3, wherein said method comprises precipitating said virus with polyethylene glycol.

5. The method of claim 1, wherein the virus is lysed with SDS.

6. The method of claim 1, wherein said nucleic acid is precipitated with trichloroacetic acid.

L25 ANSWER 3 OF 8 USPATFULL on STN

2003:203370 **Antibody** directed against HIV-1 **P25** antigen.

Montagnier, Luc, Le Plessis Robinson, FRANCE
Chermann, Jean-Claude, Elancourt, FRANCE
Barre-Sinoussi, Francoise, Issy les Moulineaux, FRANCE
Brun-Vezinet, Francoise, Paris, FRANCE
Rouzioux, Christine, Paris, FRANCE
Rozenbaum, Willy, Paris, FRANCE
Dauguet, Charles, Paris, FRANCE
Gruest, Jacqueline, L'Hay les Roses, FRANCE
Nugeyre, Marie-Therese, Paris, FRANCE
Rey, Francoise, Paris, FRANCE
Axler-Blin, Claudine, Paris, FRANCE
Chamaret, Solange, Paris, FRANCE
Gallo, Robert C., Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadharan, Mangalasseril G., Vienna, VA, United States
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)The United States of America as represented by the Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 6600023 B1 20030729
APPLICATION: US 1993-19297 19930218 (8)
PRIORITY: GB 1983-8424800 19830915
DOCUMENT TYPE: Utility; GRANTED.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB **Antibodies** which bind with antigens of human immunodeficiency virus type 1 (HIV-1), such as Lymphadenopathy Associated Virus (LAV), are disclosed. Retroviruses associated with Acquired Immune Deficiency Syndrome (AIDS) are isolated from the sera of patients afflicted with Lymphadenopathy Syndrome (LAS) or AIDS. Viral extracts, structural proteins and other fractions of the retrovirus immunologically recognize the sera of such patients.

CLM What is claimed is:

1. An isolated **antibody** directed against HIV-1 **p25** antigen, wherein said **antibody** is formed using an HIV-1 extract containing **p25** or using purified HIV-1 **p25** protein in animals.

2. The isolated **antibody** of claim 1, wherein said **antibody** is monoclonal.

L25 ANSWER 4 OF 8 USPATFULL on STN
2003:196946 Immunodeficiency recombinant poxvirus.
Paoletti, Enzo, Delmar, NY, United States
Tartaglia, James, Schenectady, NY, United States
Cox, William I., East Greenbush, NY, United States
Gallo, Robert, Baltimore, MD, United States
Franchini, Genoveffa, Washington, DC, United States
Virogenetics Corporation, Troy, NY, United States (U.S. corporation)
US 6596279 B1 20030722
APPLICATION: US 1998-136159 19980814 (9)
DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Attenuated recombinant viruses containing DNA encoding an immunodeficiency virus and/or CTL antigen, as well as methods and compositions employing the viruses, expression products therefrom, and **antibodies** generated from the viruses or expression products, are disclosed and claimed. The recombinant viruses can be NYVAC or ALVAC recombinant viruses. The DNA can code for at least one of: HIV1gag(+pro)(IIIB), gp120(MN)(+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, ELDKWA or LDKW epitopes, preferably HIV1gag(+pro)(IIIB), gp120(MN) (+transmembrane), two (2) nef(BRU)CTL and three (3) pol(IIIB)CTL etpitopes; or two ELDKWA in gp120 V3 or another region or in gp160. The two (2) nef(BRU)CTL and three (3) pol(IIIB)CTL epitopes are preferably CTL1, CTL2, pol1, pol2 and pol3. The recombinant viruses and gene products therefrom and **antibodies** generated by the viruses and gene products have several preventive, therapeutic and diagnostic uses. DNA from the recombinant viruses are useful as probes or, for generating PCR primers or for immunization. Also disclosed and claimed are HIV immunogens and modified gp160 and gp120.

CLM What is claimed is:

1. A recombinant poxvirus comprising exogenous DNA encoding at least one Lentivirus epitope, wherein the poxvirus is a vaccinia virus having J2R, B13R+B14R, A26L, A56R, C7L-K1L and I4L are deleted from the virus; or a thymidine kinase gene, a hemorrhagic region, an A type inclusion body region, a hemagglutinin gene, a host range region, and a large subunit, ribonucleotide reductase are deleted from the virus; or the poxvirus is a NYVAC recombinant virus; and wherein the exogenous DNA encodes: HIV1 gag(+pro)(IIIB), gp120(MN)(+transmembrane) and two nef(BRU)CTL epitopes; or gp120(MN)(+transmembrane) and two ELDKWA (SEQ ID NO: 147) epitopes in the gp120 V3 loop region; or HIV1 gag(+pro)(IIIB) and gp120(MN)(+transmembrane); or HIV1 gag(+pro)(IIIB), gp120(MN)(+transmembrane) and two nef(BRU) and three pol(IIIB) CTL epitope containing regions; or at least one of: HIV1 gag(+pro)(IIIB), gp120(MN)(+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, and ELDKWA (SEQ ID NO: 147) or LDKW (SEQ ID NO: 148) epitopes.

2. The recombinant poxvirus of claim 1 wherein wherein the exogenous DNA encodes HIV1 gag(+pro)(IIIB), gp120(MN)(+transmembrane) and two nef(BRU)CTL epitopes.

3. The recombinant poxvirus of claim 2 wherein the two nef(BRU)CTL epitopes are CTL1 and CTL2.

4. The recombinant poxvirus of claim 1 wherein the exogenous DNA encodes gp120(MN)(+transmembrane) and two ELDKWA (SEO ID NO: 147) epitopes in the gp120 V3 loop region.

5. The recombinant poxvirus of claim 1 wherein the exogenous DNA encodes HIV1 gag(+pro)(IIIB) and gp120(MN)(+transmembrane).

6. The recombinant poxvirus of claim 1 wherein the exogenous DNA encodes HIV1 gag(+pro)(IIIB), gp120(MN)(+transmembrane) and two nef(BRU) and three pol(IIIB) CTL epitope containing regions.

7. The recombinant poxvirus of claim 6 wherein the two nef(BRU)CTL and three pol(IIIB)CTL epitopes are: CTL1, CTL2, pol1, pol2 and pol3.

8. The recombinant poxvirus of claim 1 which is a NYVAC recombinant virus.

9. The recombinant poxvirus of claim 1 wherein the exogenous DNA codes for at least one of: HIV1 gag(+pro)(IIIB), gp120(MN)(+transmembrane), nef(BRU)CTL, pol(IIIB)CTL, and ELDKWA (SEQ ID NO: 147) or LDKW (SEQ ID NO: 148) epitopes.

10. The recombinant poxvirus of claim 9 wherein the exogenous DNA codes for HIV1 gag(+pro)(IIIB), gp120(MN)(+transmembrane), two nef(BRU)CTL and three pol(IIIB)CTL epitopes; or, two ELDKWA (SEO ID NO: 147) epitopes.

11. The recombinant poxvirus of claim 10 wherein the two nef(BRU)CTL and three pol(IIIB)CTL epitopes are: CTL1, CTL2, pol1, pol2 and pol3.

12. The recombinant poxvirus of claim 9 wherein the ELDKWA (SEQ ID NO: 147) or LDKW (SEQ ID NO: 148) epitopes are expressed as part of a region of gp120 or a region of gp160.

13. The virus of claim 12 wherein the ELDKWA (SEQ ID NO: 147) or LDKW (SEQ ID NO: 148) epitopes are expressed as part of gp120 V3.

14. A recombinant poxvirus which is vP1313.

15. A immunogenic composition comprising a recombinant poxvirus as claimed in claim 1 and a carrier.

16 A method for expressing a Lentivirus gene product comprising infecting a suitable host cell with a recombinant poxvirus as claimed in claim 1.

17. A method for inducing an immunogical response to a Lentivirus gene product comprising administering a recombinant poxvirus as claimed in claim 1.

18. A method for inducing an immunogical response to a Lentivirus gene product comprising administering a composition as claimed in claim 15.

19. A method for inducing an immunogical response to a Lentivirus gene product comprising administering a recombinant poxvirus comprising exogenous DNA encoding at least one Lentivirus epitope, wherein the poxvirus is a vaccinia virus having J2R, B13R+B14R, A26L, A56R, C7L-K1L and I4L are deleted from the virus; or a thymidine kinase gene, a hemorrhagic region, an A type inclusion body region, a hemagglutinin gene, a host range region, and a large subunit, ribonucleotide reductase are deleted from the virus; or the poxvirus is a NYVAC recombinant virus; and said method further comprising subsequently administering an antigen derived from a Lentivirus, whereby the administation of the recombinant poxvirus is a priming administration and the administration of the antigen derived from the Lentivirus is a booster administration.

20. The method of claim 18 further comprising subsequently administering an antigen derived from Lentivirus, whereby the administation of the composition is a priming administration and the administration of the antigen derived from Lentivirus is a booster administration.

21. The method of claim 19 wherein the Lentivirus is human immunodeficiency virus.

22. A recombinant poxvirus which is vP1319.

23. The method of claim 17 further comprising subsequently administering an antigen derived from Lentivirus, whereby the administation of the composition is a priming administration and the administration of the antigen derived from Lentivirus is a booster administration.

L25 ANSWER 5 OF 8 USPATFULL on STN
2002:194692 Methods and kits employing LAV antigens for the detection of HIV-1-specific **antibodies**.
Montagnier, Luc, Le Plessis-Robinson, FRANCE
Chermann, Jean-Claude, Elancourt, FRANCE
Barre-Sinoussi, Francoise, Issy les Moulineaux, FRANCE
Brun-Vezinet, Francoise, Paris, FRANCE
Rouzioux, Christine, Paris, FRANCE
Rozenbaum, Willy, Paris, FRANCE
Dauguet, Charles, Paris, FRANCE
Gruest, Jacqueline, L'Hay les Roses, FRANCE
Nugeyre, Marie-Therese, Paris, FRANCE
Rey, Francoise, Paris, FRANCE
Axler-Blin, Claudine, Paris, FRANCE
Chamaret, Solange, Paris, FRANCE
Gallo, Robert C., Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadharan, G., Vienna, VA, United States
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)The United States of America as represented by the Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 6428952 B1 20020806
APPLICATION: US 1995-424631 19950419 (8)
PRIORITY: GB 1983-8424800 19830915
DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Retroviruses associated with Acquired Immune Deficiency Syndrome (AIDS), including Lymphadenopathy Associated Virus (LAV), are isolated from the sera of patients afflicted with Lymphadenopathy Syndrome (LAS) or AIDS. LAV is a Human Immunodeficiency Virus (HIV). Viral extract, structural proteins and other fractions of the retrovirus immunologically recongize the sera of such patients. Immunological reaction is used to detect **antibodies** that specifically bind to antigenic sites of the retrovirus in samples of body fluids from patients with AIDS or risk of AIDS.
CLM What is claimed is:
1. A method for detecting **antibodies** against an HIV-1 retrovirus in a body fluid comprising: (a) providing a body fluid from a human subject; (b) providing a control antigen; (c) contacting said body fluid with said control antigen; (d) contacting said body fluid with a composition comprising purified HIV-1 **p25** antigen; (e) detecting the immunological complexes formed both between an **antibody** in said body fluid and said control antigen and between an **antibody** in said body fluid and said composition; and (f) comparing the level of immunological complexes formed in steps (c) and (d).

2. The method of claim 1 wherein the tested body fluid is serum.

3. The method of claim 1, wherein the detection of said immunological complexes is achieved by reacting said immunological complexes with a labeled reagent selected from the group consisting of antihuman immunoglobulin-**antibodies** and bacterial A protein of Staphylococcus aureus, and then detecting the product formed between said complex and said reagent.

4. A kit for detecting anti-HIV-1 **antibodies** in a body fluid comprising: (a) a first container comprising a composition comprising purified HIV-1 **p25** antigen; and (b) a second container comprising a detection reagent.

5. The kit of claim 4, wherein said kit comprises a labeled reagent selected from the group consisting of antihuman immunoglobulin **antibodies** and protein A of Staphylococcus aureus.

6. A composition comprising purified HIV-1 **p25** antigen.

7. A purified HIV-1 **p25** antigen.

L25 ANSWER 6 OF 8 USPATFULL on STN
2002:122444 Methods and kits for detecting **antibodies** against an HIV variant.
Montagnier, Luc, Le Plessis-Robinson, FRANCE
Chermann, Jean-Claude, Elancourt, FRANCE
Barre-Sinoussi, Francoise, Issy les Moulineaux, FRANCE
Rouzioux, Christine, Paris, FRANCE
Rozenbaum, Willy, Paris, FRANCE
Dauguet, Charles, Paris, FRANCE
Gruest, Jacqueline, L'Hay les Roses, FRANCE
Nugeyre, Marie-Therese, Paris, FRANCE
Rey, Francoise, Paris, FRANCE
Gallo, Robert C, Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadhar, Mangalasseril G, Vienna, VA, United States
Axler-Blin, Claudine, Paris, FRANCE
Chamaret, Solange, Paris, FRANCE
Institut Pasteur, Paris, FRANCE (non-U.S. corporation)The United States of America as represented by the Secretary of the Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 6395495 B1 20020528
APPLICATION: US 1999-437126 19991110 (9)
PRIORITY: GB 1983-24800 19830915
DOCUMENT TYPE: Utility; GRANTED.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention concerns a retrovirus extract containing a **p25** protein which recognizes immunologically sera of patients afflicted with lymphadenopathy syndrom (LAS) or acquired immune deficiency syndrom (AIDS). It relates to a method and kit for in vivo assay of LAS or AIDS involving contacting sera from patients to be diagnosed for such diseases with said retrovirus extract and by detecting the immunological reaction, if any.
CLM What is claimed is:
1. A method for the in vitro identification of human immunodeficiency virus type 1 (HIV-1) comprising: subjecting cultures of infected and uninfected human lymphocytes to a protein labeling reaction; lysing said labeled cultures of lymphocytes; contacting said lysed lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; separating said immunocomplexes; and detecting labeled proteins in said separated immunocomplexes, wherein the detection of labeled HIV-1 proteins in said infected culture is indicative of the presence of a cell infected by HIV-1 in said culture.

2. The method of claim 1, wherein said immunocomplexes are separated by precipitation with protein A.

3. The method of claim 1, wherein said labeled proteins are resolved on a plyacrylamide gel under denaturing conditions.

4. The method of claim 1, wherein said proteins are radiolabeled.

5. The method of claim 4, wherein said proteins are radiolabeled with ^{35}S-methionine.

6. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a fluorescently-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immunocomplexes by detecting fluorescence in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes

infected with HIV-1.

7. A method for the in vitro identification of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in patient serum comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a fluorescently-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immunocomplexes by detecting fluorescence in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in said patient serum.

8. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes, wherein said **antibody** is fluorescently labeled; and determining the presence of immunocomplexes by detecting fluorescence in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

9. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with an enzymatically-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immnocomplexes by an enzymatic reaction in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

10. A method for the in vitro identification of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in patient serum comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with an enzymatically-labeled **antibody** that binds to said immunocomplexes; and determining the presence of immunocomplexes by an enzymatic reaction in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in said patient serum.

11. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes. wherein said **antibody** is enzymatically labeled; and determining the presence of immunocomplexes by an enzymatic reaction in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

12. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a labeled **antibody** that binds to said immunocomplexes; and determining the presence of labeled immunocomplexes in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

13. A method for the in vitro identification of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in patient serum comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** to HIV-1 viruses to form immunocomplexes; contacting said immunocomplexes with a labelled **antibody** that binds to said immunocomplexes; and determining the presence of labeled immunocomplexes in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of **antibodies** that bind to human immunodeficiency virus type 1 (HIV-1) in said patient serum.

14. A method for the in vitro identification of a human immunodeficiency virus type 1 (HIV-1) comprising: contacting lysed human lymphocytes infected with HIV-1 and uninfected human lymphocytes with patient serum comprising an **antibody** that binds to **p25** of HIV-1 viruses to form immunocomplexes, wherein said **antibody** is labeled; and determining the presence of labeled immunocomplexes in the infected and uninfected samples, wherein the presence of immunocomplexes is indicative of the presence of human lymphocytes infected with HIV-1.

L25 ANSWER 7 OF 8 USPATFULL on STN
92:63788 Human Immunodeficiency Virus (HIV) associated with Acquired Immunual Deficiency Syndrome (AIDS), a diagnostic method for aids and pre-aids, and a kit therefor.
Montagnier, Luc, Le Plessis Robinson, France
Chermann, Jean-Claude, Elancourt, France
Barre-Sinoussi, Francoise, Issy Les Moulineaux, France
Brun-Vezinet, Francoise, Paris, France
Rouzioux, Christine, Paris, France
Rozenbaum, Willy, Paris, France
Dauguet, Charles, Paris, France
Gruest, Jacqueline, L'Hay Les Roses, France
Nugeyre, Marie-Therese, Paris, France
Rey, Francoise, Paris, France
Axler-Blin, Claudine, Paris, France
Chamaret, Solange, Paris, France
Gallo, Robert C., Bethesda, MD, United States
Popovic, Mikulas, Bethesda, MD, United States
Sarngadharan, Mangalasseril G., Vienna, VA, United States
Institut Pasteur, Paris Cedex, France (non-U.S. corporation)The United States of America as represented by the Secretary of The Department of Health and Human Services, Washington, DC, United States (U.S. government)
US 5135864 19920804
APPLICATION: US 1987-117937 19871105 (7)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Retroviruses associated with Acquired Immune Deficiency Syndrome (AIDS), including Lymphadenopathy Associated Virus (LAV), are isolated from the sera of patients afflicted with Lymphadenopathy Syndrome (LAS) or AIDS. LAV is a Human Immunodeficiency Virus (HIV). Viral extract, structural proteins and other fractions of the retrovirus immunologically recognize the sera of such patients. Immunological reaction is used to detect **antibodies** that specifically bind to antigenic sites of the retrovirus in samples of body fluids from patients with AIDS or risk of AIDS. A kit for in vitro assay of LAS or AIDS is provided.
CLM What is claimed is:
1. A human retrovirus, wherein the retrovirus is Human Immunodeficiency Virus (HIV) in a purified form.

2. An in vitro culture of Human Immunodeficiency Virus (HIV) essentially free of other human retroviruses.

3. An isolate of a retrovirus, which is Human Immunodeficiency Virus (HIV), wherein the isolate comprises one or a mixture of antigens of

said retrovirus, wherein said antigens comprise protein, glycoprotein, or a mixture thereof of said retrovirus, and said antigens are immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

4. A suspension of a retrovirus, which is Human Immunodeficiency Virus (HIV), in a buffer therefor, wherein the suspension comprises a mixtue of antigens of said retrovirus, wherein said antigens comprise protein, glycoprotein, or a mixture thereof of said retrovirus, and said antigens are immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

5. A mixture of antigens of Human Immunodeficiency Virus (HIV), wherein said antigens comprise protein, glycoprotein, or a mixture thereof of HIV, and wherein said antigens are in a purified form and are capable of being immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS).

6. An antigen of said mixture as claimed in claim 5, wherein said protein is **p25** protein of HIV.

7. A mixture of structural proteins of Human Immunodeficiency Virus (HIV), wherein said proteins comprise protein, glycoprotein, or a mixture thereof of HIV, and wherein said proteins are in a purified form.

8. A structural protein of said mixture as claimed in claim 7, wherein said protein is envelope protein of HIV.

9. A structural protein of said mixture as claimed in claim 7, wherein said protein is core protein of HIV.

10. A structural protein of said mixture as claimed in claim 7, wherein said protein is p15 protein of HIV.

11. A structural protein of said mixture as claimed in claim 7, wherein said protein is p36 protein of HIV.

12. A structural protein of said mixture as claimed in claim 7, wherein said protein is p42 protein of HIV.

13. A structural protein of said mixture as claimed in claim 7, wherein said protein is p80 protein of HIV.

14. A mixture of labeled antigens of Human Immunodeficiency Virus (HIV), wherein said antigens are capable of being immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or Acquired Immune Deficiency Syndrome (AIDS); wherein said antigens comprise protein, glycoprotein, or a mixture thereof of HIV, and wherein said antigens are labeled with an immunoassay label selected from the group consisting of radioisotopes, enzymes, and fluorescent labels.

15. A labeled antigen of said mixture as claimed in claim 14, wherein said labeled antigen is in a purified form.

16. A labeled antigen of said mixture as claimed in claim 14, wherein said label is an enzyme or an enzyme substrate.

17. An extract of a retrovirus, which is Human Immunodeficiency Virus (HIV), wherein said extract comprises one a mixture of antigens of said retrovirus, wherein said antigens comprise protein, glycoprotein, or a mixture thereof of HIV, and said antigens are immunologically recognized by sera of a patient afflicted with Lymphadenopathy Syndrome (LAS) or

Acquired Immune Deficiency Syndrome (AIDS).

18. Retroviral extract as claimed in claim 17, wherein said extract comprises **p25** protein of said retrovirus.

19. Retroviral extract as claimed in claim 17, wherein said extract comprises p15 protein of said retrovirus.

20. Retroviral extract as claimed in claim 17, wherein said extract comprises **p25** protein of said retrovirus.

21. Retroviral extract as claimed in claim 17, wherein said extract comprises p36 protein of said retrovirus.

22. Retroviral extract as claimed in claim 17, wherein said extract comprises p80 protein of said retrovirus.

23. Retroviral extract as claimed in claim 17, wherein said extract comprises antigen that is not immunologically recognized by **antibody** which binds to p24 protein of Human T-Lymphotropic Virus (HTLV-1).

24. Retroviral extract as claimed in claim 17, wherein said extract is free from p19 protein of Human T-Lymphotropic Virus (HTLV-1) when assayed by indirect fluorescence assay using monoclonal **antibody** to said p19 protein.

25. Retroviral lysate as claimed in claim 24, wherein said lysate is enriched in **p25** protein of said retrovirus.

26. Retroviral extract as claimed in claim 17, wherein said retrovirus has the identifying characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-232.

27. Retroviral extract as claimed in claim 17, wherein said retrovirus has the identifying characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-240.

28. Retroviral extract as claimed in claim 17, wherein said retrovirus has the identifying characteristics of the virus deposited under culture collection accession number C.N.C.M. No. I-241.

29. An in vitro diagnostic method for the detection of the quantity of the presence or absence of **antibodies** which bind to antigens of a human retrovirus indicative of Acquired Immune Deficiency Syndrome (AIDS) or of Lymphadenopathy-Associated Syndrome (pre-AIDS), wherein said method comprises contacting a lysate enriched in **p25** protein of said retrovirus with a biological fluid for a time and under conditions sufficient for said **p25** protein and **antibodies** in the biological fluid to form antigen-**antibody** complexes; and detecting the formation of said complexes.

30. The method of claim 29, wherein the detecting step further comprises measuring the formation of said antigen-**antibody** complex.

31. The method of claim 30, wherein formation of said antigen-**antibody** complex is measured by ELISA (an enzyme-linked immunoabsorbent assay) or indirect immunofluorescent assay.

32. The method of claim 29, wherein said biological fluid is human sera.

33. The method of claim 29, wherein said biological fluid is from a patient with AIDS.

34. The method of claim 29, wherein said biological fluid is from a patient with pre-AIDS.

35. The method of claim 29, wherein said human retrovirus is selected from the group consisting of Lymphadenopathy Associated Virus, LAV_1 ; Immune Deficiency Associated Virus, $IDAV_1$; and Immune Deficiency Associated Virus, $IDAV_2$.

36. A diagnostic kit for the detection of the presence or absence of **antibodies** which bind to antigens of a human retrovirus indicative of Acquired Immune Deficiency Syndrome (AIDS) or of Lymphadenopathy-Associated Syndrome (pre-AIDS), wherein said kit comprises a lysate enriched in **p25** protein of said retrovirus; a reagent to detect antigen-**antibody** immune complexes that comprise said protein; a biological reference material lacking **antibodies** that immunologically bind with said protein; a comparison sample comprising **antibodies** of said protein; and wherein said **p25** protein and said reagent, biological reference material, and comparison sample are present in an amount sufficient to perform said detection.

37. The diagnostic kit of claim 36, wherein the formation of immune complexes is detected by employing immunological assays selected from the group consisting of radioimmunoassay, immunoenzymatic assay, and immunofluorescent assay.

38. The retrovirus according to claim 1, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

39. The in vitro culture of Human Immunodeficiency Virus (HIV) according to claim 2, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

40. The isolate of a retrovirus according to claim 3, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

41. The suspension of a retrovirus according to claim 4, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

42. A mixture of antigens of Human Immunodeficiency Virus (HIV) according to claim 5, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

43. Antigen according to claim 6, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

44. Structural protein of Human Immunodeficiency Virus (HIV) according to any one of claims 7 to 9, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

45. Structural protein of Human Immunodeficiency Virus (HIV) according to any one of claims 10 to 13, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232,

C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

46. A mixture of labeled antigens of Human Immunodeficiency Virus (HIV) according to claim 14, wherein said virus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

47. Retroviral lysate according to claim 25, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

48. The method according to claim 29, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

49. The diagnostic kit according to claim 36, wherein said retrovirus has the identifying characteristics of a virus deposited under culture collection accession number selected from the group consisting of C.N.C.M. No. I-232, C.N.C.M. No. I-240, and C.N.C.M. No. I-241.

L25 ANSWER 8 OF 8 USPATFULL on STN
87:81211 Human immunodeficiency viruses associated with Acquired Immune Deficiency Syndrome (AIDS), a diagnostic method for AIDS and pre-AIDS, and a kit therefor.
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Chermann, Jean-Claude, Elancourt, France
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Dauguet, Charles, Paris, France
Gruest, Jacqueline, L'Hay les Roses, France
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US 4708818 19871124
APPLICATION: US 1985-785638 19851008 (5)
PRIORITY: GB 1983-24800 19830915
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Retroviruses associated with Acquired Immune Deficiency Syndrome (AIDS), including Lymphadenopathy Associated Virus (LAV), are isolated from the sera of patients afflicted with Lymphadenopathy Syndrome (LAS) or AIDS. LAV is a Human Immunodeficiency Virus (HIV). Viral extract, structural proteins and other fractions of the retrovirus immunologically recognize the sera of such patients. Immunological reaction is used to detect **antibodies** that specifically bind to antigenic sites of the retrovirus in samples of body fluids from patients with AIDS or risk of AIDS. A kit for in vitro assay of LAS or AIDS is provided.
CLM What is claimed is:
1. An in vitro diagnostic method for the detection of the presence or absence of **antibodies** which bind to antigens of a human retrovirus indicative of acquired immune deficiency syndrome (AIDS) or of lymphadenopathy-associated syndrome (pre-AIDS), which method comprises contacting a lysate of said human retrovirus comprising antigens of said

retrovirus with a biological fluid for a time and under conditions sufficient for the retroviral antigens in the lysate and **antibodies** in the biological fluid to form antigen-**antibody** complexes and detecting the formation of the complexes.

2. The method of claim 1 wherein the detecting step further comprises measuring the formation of said antigen-**antibody** complexes.

3. The method of claim 1 wherein the biological fluid is human sera.

4. The method of claim 1 wherein the biological fluid is from a patient with pre-AIDS.

5. The method of claim 1 wherein the human retrovirus is selected from the group consisting of a lymphadenopathy associated virus (LAV) and an immune deficiency associated virus (IDAV).

6. The method of claim 5 wherein the human retrovirus is LAV.

7. The method of claim 6 wherein the human retrovirus is LAV1.

8. The method of claim 5 wherein the human retrovirus is selected from the group of IDAV1 and IDAV2.

9. A diagnostic kit for the detection of the presence or absence of **antibodies** which bind to antigens of a human retrovirus indicative of acquired immune deficiency syndrome (AIDS) or of lymphadenopathy-associated syndrome (pre-AIDS), which kit comprises a retroviral lysate which comprises antigens of said retrovirus and means for detecting the formation of immune complexes between said antigens and said **antibodies**, wherein the lysate and the means are present in an amount sufficient to perform said detection.

10. The diagnostic kit of claim 9 wherein the means for detecting the formation of the immune complexes are immunological assay means selected from the group consisting of radioimmuno assay, immuno-enzymatic and immunofluorescent assay means.

11. A method for detection of **antibodies** which specifically bind to antigenic sites of the AIDS or pre-AIDS-associated LAV virus in samples of body fluids of patients with Acquired Immune Deficiency Syndrome (AIDS) or risk of AIDS (pre-AIDS) which comprises contacting virus fractions or a virus extract or a lysate of said virus with **antibodies** from human sera for a time and under conditions sufficient to permit formation of antigen-**antibody** complexes between said virus fractions, virus extract or lysate and said **antibodies** and measuring the formation of said antigen-**antibody** complexes by ELISA (an enzyme-linked immunosorbent assay) or indirect immunofluorescent assay.

12. A method for detection of **antibodies** which specifically bind to antigenic sites of the AIDS or pre-AIDS-associated LAV virus in samples of body fluids of patients with Acquired Immune Deficiency Syndrome (AIDS) or risk of AIDS (pre-AIDS) which comprises contacting virus fractions or a virus extract or a lysate of said virus with **antibodies** from human sera for a time and under conditions sufficient to permit formation of antigen-**antibody** complexes between said virus fractions, virus extract or lysate and said **antibodies** and detecting the formation of said complexes.

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FILE 'USPATFULL' ENTERED AT 21:34:27 ON 01 MAR 2004